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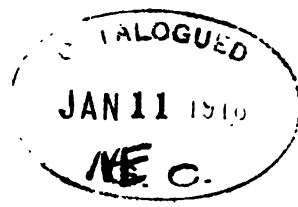
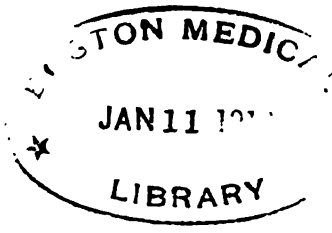
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A New Year Greeting.—A new year has been ushered in with due solemnity and jubilation. We extend to our readers in every civilized land a sincere New Year's greeting, even tho our publication date makes it somewhat late.

Ten years ago Wassermann announced to the world the test which bears his name and Von Pirquet published his investigations on cutaneous reaction. These marked great advances in the diagnosis of syphilis and tuberculosis. The year that is at hand, we trust, will be productive of scientific results of equal importance to mankind. Progress of medicine is rapid. The enthusiastic hosts, delving into the mysteries of disease, will undoubtedly reveal much to merit commendation and gratefulness from the thoughtful profession.

May the year be fruitful in the development of new drugs. May it be rich in the initiative of diagnostic procedures. May it be consecrated by many discoveries leading to the further relief of the world from pestilence and disease. May the profession, as a whole, war with evils in and out of the profession. May it be at peace with its co-workers in every field of human endeavor, and may each succeeding day find it achieving more powerful and more certain results for the betterment of the national health.

We wish the profession and the nation at large a happy and prosperous year.

Saving the Indian Race.—The original American is the Indian. For many years, the Red Man has been pointed out as a member of a vanishing race, in a sense, succumbing to the process of civilization thru the neglect of the White Man, who boasted of his civilization.

In the *Nashville Journal of Medicine and Surgery*, November, 1916, Dr. L. W. White, Superintendent of an Indian school, presents an article that is remarkable and inspiring in drawing attention to what has been accomplished in restraining the hand of death from the Indian tribes thru the intelligent leadership of our present Commissioner of Indian Affairs, the Honorable Cato Sells.

When it was thought that the Indian race was approaching the "end of the trail," a humane commissioner announced a campaign for health which was to begin with concentrated efforts to save the babies. Superintendents of reservations, teachers, physicians, matrons, nurses, were called upon to awaken interest in personal hygiene, cleanliness and sobriety. To quote his words, "The crux of the matter is: We must, if possible, get rid of the intolerable conditions that infest some of the Indian homes on the reservation, creating as they do an atmosphere of death instead of life."

With this point of view dominating his official orders, a corps of physicians, dentists, ophthalmologists, and nurses were thrown into the field. The general health



appropriations for relieving distress and prevention of diseases among Indians, was increased from \$60,000 in 1912 to \$200,000 in 1914 to \$330,000 in 1916, and there is an appropriation of \$350,000 for 1917.

With money provided, hospitals were established at various points in the Indian country, educational pamphlets and United States Health Bulletins on a large variety of subjects were freely distributed among the Indian lodges.

Specific efforts were made to arouse the interest and increase the knowledge of the agency physicians, especially along the lines necessary to counteract the influences causing the deterioration of Indians and leading to their constantly increasing mortality from tuberculosis and other equally fatal diseases. As a result, infant mortality has decreased. The advance of trachoma has been halted. The conditions breeding pulmonary disease are being mitigated. The Red Man is being educated to protect the welfare of himself and his family.

A Rising Birth Rate.—In 1915, the tide of mortality turned. As a result of well formed plans, by virtue of enthusiastic co-operation, and with the inspiring stimulation of Commissioner Sells, the birth rate among the Indians triumphed over the death rate. A fairly complete record of the vital statistics of 1916 indicates that the number of births exceeded the deaths by 1,522!

The completion of the Panama Canal represents a triumph of modern medicine. Colonel Gorgas has proved himself to be a health engineer of as great capabilities as Colonel Goethals, the canal builder. Colonel Gorgas was a physician filled with enthusiasm for his work, wise in his judgment,

broad in his knowledge, and capable in executive affairs. The Panama Canal is indeed an enduring tribute to his power and wisdom.

But what shall we say of a layman who builds practically a new race out of material rapidly deteriorating and physically decadent?

For years, the United States' Government, as the protector of the Indians, has been guarding their lands, their forests, their mines, their oil and gas. For decades their physical degeneration has been recognized without arousing any qualms of conscience or stimulating any endeavors to secure their regeneration or to overcome the oppressive influences leading to their death and disability. What a sense of responsibility was shown by a Commissioner of Indian Affairs, who upon facing the issue stated, "To discover such a condition and not correct it were criminal." What insight, what superb judgment is bound up in his thought, "There is something fundamental here: We cannot solve the Indian problem without Indians. We cannot educate their children unless they are kept alive." In three years, Cato Sells has shown himself to be a remarkably effective public health officer.

Without underestimating the value of the services contributed by the doctors, the dentists, the nurses, the matrons, and the superintendents, the result thus far attained is a triumph for a humanitarian. It is a tribute to the foresight and vision of an intelligent mind. It is an achievement of effective administration, patient endeavor, and supreme devotion to the Indians, who have been his wards. No accomplishment in the past decade is better entitled to public acclaim and to the admiration of the people of this government than this remarkable health rehabilitation of the Indian.

The noble Red Man is for the first time a participator of the fruits of civilization. He, the human Red Man, is receiving adequate attention at the hands of a noble White Man, whose example we present to the medical fraternity as an evidence of a duty well conceived, adequately developed, and efficiently performed.

Anti-Malarial Campaigns.—The decline in the tuberculosis death rate is undoubtedly due to the constant and uniform efforts to decrease its occurrence. Therapeutic advances during the past few years are insufficient to account for the marked fall in the mortality rate from pulmonary tuberculosis in the preceding decade. Tuberculosis is not a disease of seasonal occurrence, but is constantly manifesting itself during every part of the year in all sections of the country. The sustained efforts of municipal, state, and national organizations to lessen the extent of its occurrence are securing splendid results.

Malaria is a more preventable disease than tuberculosis, yet it continues to exist as a serious problem in national health, which has thus far not received its merited degree of attention from health organizations of a private or civic character. As John W. Trask points out in his discussion of Malaria as a Public Health Problem (*American Journal of Public Health*, December, 1916), plague, typhus fever, or leprosy promptly arouse the press, the people, and the health authorities to brisk activity, while more destructive diseases, known to be common in the country, fail to attract more than passing notice.

Among the numerous diseases, catalogued as preventable, none is more easily

controlled than malaria. The underlying conditions, responsible for its development, are well known. The insect carrier is easily identified and its geographical distribution thruout the country has been fairly well determined. The value of the general use of quinine in the home as a prophylactic measure is thoroly understood and endorsed as an efficacious means of protecting the individual. Because of these known factors in the dissemination of malaria, its occurrence thruout the country is another index of inactivity on the part of state health organizations, which deserves criticism. It is true that malaria is not responsible for as large a number of deaths as in former years, but it still continues to lower the vitality of human beings, to undermine their general resistance, and to lessen their economic value.

There are few diseases listed as communicable, which have received such trifling consideration from health departments. A few cases of typhoid fever, of smallpox, or the plague, immediately call forth the most modern administrative measures to secure their control and to bring about a condition unfavorable to their increase.

The mortality records of malaria may fail to disclose its presence, but this, however, does not excuse health departments from failing to take cognizance of the appearance of large numbers of malarial infections in a community. The function of health departments is not merely that of lowering the mortality rate, but of decreasing the incidence rate of disease and more particularly in raising the health standards of the communities they serve.

Individuals infected, particularly during youth, may be seriously handicapped in

their physical development, may be hampered in their educational progress, and may have their potentiality, as workmen, markedly affected. As a result of malarial infection, citizenship is impaired in many ways.

At the present time, there is no state in the Union in which the disease is not present, tho the degree of prevalence is far greater in the southern portion of the United States. It is, however, endemic in New York, Connecticut, Rhode Island, Massachusetts, and California. The relative degree of prevalence in various sections of the country has not been determined, nor can it be ascertained until States undertake in a serious way the making of malarial surveys.

Education Concerning Malaria Essential.—In connection with the careful study of the prevalence of malaria, there should be developed a systematic campaign of education as to the methods of its prevention, and local authorities should be stimulated to secure the abolition of the conditions favoring the breeding of mosquitos. By systematic anti-malarial work, it is possible to secure the eradication of the anopheles, and to restore healthful conditions for the inhabitants of districts in which malaria had previously been a serious destructive force.

The insistence upon housing reforms, the improvement of roads, the installation of sewage systems, the removal of brush, the drainage of swamps, the more extensive cultivation of lands, the oiling of shallow beds of standing water are all known to be effective measures in getting rid of the breeding places of mosquitos. It merely requires the urgent attention of health departments to secure the adoption of these anti-

malarial measures on a larger scale to redeem sections now malarious.

Apparently, the first step to be taken depends upon an awakening as to the importance of malaria as a factor in public health. The fact that malaria had a death rate in 1914 of 2.2 per hundred thousand population and that only 1,477 persons died of it in the registration area is by no means indicative of the extent or far-reaching importance of the problem. When one recognizes that the mortality from malaria is greater than that from tetanus and almost equal to that from pellagra, one wonders why commensurate attention has not been bestowed upon it by public health officials, constituting the health departments of the various states of the Union.

The mere distribution of literature, while exceedingly valuable, is insufficient to drive home with force the immeasurable advantages to be derived by a community thru reaching a malaria-free condition. Pointing out the economic and social disadvantages due to malaria serves to emphasize the importance of focussing state wide attention upon anti-malarial organizations and upon the importance of securing adequate legislation to enforce the preventive measures crystallized into state laws and local ordinances.

Malaria is not particularly in evidence during the winter months. In order to inaugurate a satisfactory campaign against it, it is necessary to begin the plan of organization before the mosquito season arrives. This is the season of the year when plans are to be formulated and matured for attacking this problem promptly, with directness and with enthusiasm.

The continuance of malaria, a preventable disease, is not to be condoned therefore, on the grounds that it does not have a high

mortality rate. Malaria constitutes a grave health problem, and its solution is known. To neglect to take advantage of our knowledge as to the methods of prevention and control is to admit indifference or negligence.

The Notification of Pregnancy.—At the November meeting of the American Association for the Study and Prevention of Infant Mortality, A. B. Emmons, of Boston, suggested that the notification of pregnancy to the health authorities should be made compulsory. The purpose of such a law is obvious. It is designed that the notification should be of a confidential nature, but at the same time afford the health officers an opportunity to safeguard the mother and child by securing "proper prenatal and safe obstetric care." It is apparent that a plan of this character, if successfully carried out, would tend to reduce infant mortality and safeguard the welfare of prospective mothers.

It is probable that the desired end could be achieved thru the institution of prenatal work by health authorities and thru the voluntary adoption of the plan by pregnant women.

Women who desire to have abortions performed would not be likely to comply with a law of this character, nor would they avail themselves of medical service, if they understood that their medical adviser would be penalized if he failed to make a mandatory notification. Physicians engaged in nefarious and illegal practices, whose consciences are dulled to their duties to the state, their obligations to the profession, and their responsibility to humanity,

would have no hesitation in ignoring a law compelling the notification of pregnancy.

General laws of a coercive nature are not desirable if it is possible to secure satisfactory results thru other measures. The comparative failure in administering the birth registration laws and laws dealing with mortality certification indicates the character of the difficulties which would ensue were compulsory notification of pregnancy to health authorities to be established.

It cannot be gainsaid that a system of voluntary registration of the fact of pregnancy would afford a remarkable opportunity for far-reaching preventive health work. The possibilities of prenatal care, thru the education of pregnant women have been established. A decrease in maternal mortality, and a marked decline in miscarriages, stillbirths, birth injuries, and infant mortality during the first two weeks caused by inadequate obstetric attention are direct results of prenatal care.

The advantages of giving proper treatment to women infected with syphilis or gonorrhea during the childbearing period have long been recognized, and the possibility of extending such medical care would be limited only by the number of women accepting the facilities afforded by intelligent public health agencies. The decrease in ophthalmia neonatorum would be as marked as the increase in maternal nursing, both constituting a direct advantage to the child and the community.

There are numerous agents already having access to the homes of all sections of large communities as nurses, medical inspectors, tenement house inspectors, and policemen, who could be utilized to distribute the information that prenatal care is

desirable and that the city or rural authorities are ready and willing to give advice, suggestions, and supervision to those desirous of securing it, and who have no regular family medical attendant.

The hospitals and clinics should be prepared to extend their services to the giving of prenatal care to those accustomed to make use of their opportunities.

The value of early medical attention during pregnancy with constantly recurring visitation for examination, instruction, and advice should be disseminated to the homes in every community. Physicians, themselves, should play their part in encouraging women to recognize the protective influences for themselves and their unborn children that are to be secured through the voluntary acceptance of the principle of prenatal supervision and care.

It is highly desirable that educational methods of this character should be instituted before having recourse to mandatory legislation, which is not likely to be as successful as the compulsory birth notification, which thus far, after years of agitation, has failed to secure general adoption even under the most rigorous state or municipal administration.

Physicians and the Ungraded Children.

—In pedagogic circles, the problems of the ungraded class are most interesting and form the basis of a large amount of constructive work. Children in ungraded classes, in general are those who are mentally retarded. Obviously, mental retardation is not necessarily due to an inherent defect, but may arise from physical disabilities affecting the channels of sensation,

which are so essential for the acquisition of knowledge. Brain development is hampered by deafness, diminished vision, or malnutrition, while cardiac defects, dental defects, and diseases of various other portions of the body may interfere with the potential development of the mind.

It is beyond question that the educational and social problems involved in the training and scientific development of mentally retarded children involves the cooperation of the teacher, psychologist, social worker, and physician. No single one of these various types of social agencies suffices to encompass all the knowledge necessary to arrive at a complete diagnosis or plan of action.

It is greatly to the credit of teachers throughout the country that they have been actively interested in the numerous problems of the ungraded children. As a further expression of practical interest, there appears a small journal "*Ungraded*," which is published by the Ungraded Teachers' Association of New York City. It is interesting to find that the entire editorial force consists of teachers, while the advisory board contains psychologists, psycho-clinicians, active workers in educational psychology, and students of social research. There is only one medical name in connection with the entire publication, and she is an Inspector of Feeble-Minded in Ontario, Canada.

From the standpoint of medicine, it would appear that the work, which the editors contemplate, might be enhanced in value if they were to take advantage of the advice of a few physicians, who might be psychiatrists, neurologists, or individuals familiar with the ordinary physical disabilities of children. Probably because of the fact that the teachers are accustomed to take advantage of clinics, public and pri-

vate, they do not place as high a value upon the relation of clinical medicine to mental retardation as is desirable. It is true that medical examinations are constantly made and medical treatment is instituted in order to correct disabilities, diseases, or defects.

There is a splendid opportunity for co-operation between teachers and the medical profession. The wide introduction of medical inspection in schools, school nursing, home and school visitors indicates the increased recognition of the value of the study of the individual child, with a view to removing those characteristics determining mental dullness or feeble-mindedness.

It is, therefore, all the more striking to find that a magazine of this wide scope, most commendably begun by teachers, should appear to be divorced in its editorial and advisory relations from medicine. The willingness of physicians to cooperate is beyond discussion. The light, which medicine may shed upon the problems of teachers, permits of no argument. "Ungraded" is a welcome addition to the literature relative to feeble-mindedness, but its sphere of influence should be widened and its articles reflect medical as well as pedagogical or psychological opinion.

Herein a further illustration of the necessity of physicians participating in educational work and in making their influence felt in educational circles. Classes for the blind, the deaf, the crippled, the myopic, the trachomatous, as well as for the mentally defective represent types of ungraded classes in which medical counsel is useful and necessary.

Wales has fallen from 36.3 per thousand of population to 23.8. During the same period, the death rate has decreased. Allowing for the increase of population due to immigration, the decennial percentage of increase in the population has fallen from 13.21 (1861 to 1871) to 10.89 (1901 to 1911).

The 44th annual report of the Local Government Board, 1914 to 1915, points out that the death rate cannot decrease indefinitely, while the birth rate may. In view of the sacrifice of numerous sons upon the fields of battle, the importance of checking a fall in the birth rate is apparent. It becomes necessary, therefore, to consider the various factors entering into the mortality of childbearing women.

In the words of the report, "To a very large extent, the same causes operate in producing both excessive maternal mortality and excessive infant mortality in the first few weeks after birth and still more in the antenatal period. * * * It may indeed be taken as axiomatic that any influences brought to bear to improve the health of mothers must also influence favorably the health of their infants."

In Scotland, childbearing is a cause of mortality in every 175 registered births, in Wales 179, in Ireland 191, and in England 259. These differences in maternal mortality are due to a large variety of causes.

It is regrettable to note that the maternal mortality rate appears to be lower in those communities where midwives attend at the larger proportion of the births. In many towns, the maternal death rate appears to rise in direct proportion to medical attendance as distinguished from the service performed by midwives. Under the English law, this cannot be explained on the basis that unfavorable cases are turned over by

Maternal Mortality.—During the past 28 years, the birth rate for England and

midwives to physicians, because in the instances where this occurs, the cases are still listed as under the direction of the midwife. This, however, is but a single factor in the maternal mortality rate and does not serve as a basis for a satisfactory conclusion, because the study fails to cover a sufficiently large section of the country.

The maternal death rate arises from a complex economic, social, and medical situation which obtains in this country to a greater extent than in England. At the present time, there is insufficient information regarding the relative effects of numerous factors, so that it is an impossibility to single out any one as the most important in causing this most regrettable of all mortality rates. The conclusion stated in the report carries its own lesson.

"General experience, apart from statistical evidence, appears to point to the conclusion that the differences are caused in the main by differences in availability of skilled assistance when needed in pregnancy, and at and after child birth."

There is every reason to believe that the obstetrical facilities of this country are below the standard which should be demanded by a civilized nation. The establishment of maternity clinics, the extension of district obstetrical nursing, the organization of agencies for prenatal care, the improvement in the opportunities for obstetrical experience of medical tyros, the licensure, supervision, and control of midwives, together with their education, the medical supervision of pregnant women, and the supplying of proper facilities for obstetrical attention at all times form a serious phase in the responsibility of the medical profession for lessening the maternal mortality rate.

During 1914 in the registration area of

the United States, there were 10,518 deaths due to the accidents of pregnancy and the puerperal state. This is a maternal mortality rate of 15.9 per hundred thousand population. Here is a problem involving a death rate higher than that of typhoid fever, measles, scarlet fever, whooping cough, acute endocarditis, diabetes, or suicide.

If we were to regard the maternal mortality as occurring during a single month or two during the year, the nation would be aroused by the idea that a tremendous epidemic had fallen upon the country, and adequate means would immediately be adopted to attack it. Maternal mortality is not merely a dysgenic force in the community, but it is a fundamental destructive condition which decreases the development of the nation. Here is a serious subject of inquiry meriting investigation and research by thoughtful clinicians, laboratory workers, obstetricians, and our ever faithful general practitioners.

Diphtheria Control.—Knowledge as to the methods of prevention and cure merely possess academic interest unless the facts are utilized in public health work. A demonstration of the truth of this is evidenced in a Statistical Study of Diphtheria by F. S. Crum, a paper read before the Vital Statistic Section of the American Public Health Association.

While it is undoubtedly true that there is an annual saving of at least 250,000 lives throughout the world, as a result of the introduction of antitoxin, the diphtheria death rate is still responsible for about 4 per cent. of the total mortality of children under the age of 15 years.

With the annual number of deaths from diphtheria greater than that resulting from scarlet fever, measles, or whooping cough, it is evident that physicians have not taken complete advantage of the worth of antitoxin in the prevention and cure of diphtheria. There is every reason to believe that diphtheria, as a disease, has not decreased and is endemic in most of the countries of the world, with occasional periods of epidemic occurrence.

The control of diphtheria is difficult, owing to the existence of a large number of diphtheria carriers, whose presence is not suspected and whose wanderings are difficult to supervise or restrict. If, however, the Schick test were more generally employed in order to determine the children susceptible to this infection, it would become possible to immunize a large portion of the susceptible child population and thus reduce materially its incidence.

The attack and mortality rates are highest during the second, third, and fourth years of life, and it is during this period of the pre-school age that children are not under general observation by any organized protective agency. It should be a part of the duty and responsibility of those responsible for the control of institutions for children, whether orphan asylums, day nurseries, milk stations, or convalescent homes, to endeavor to determine the susceptibility of the visitants or inmates to Klebs-Loeffler infection.

During the five year period, 1910 to 1914, 62.2 per cent. of all the deaths from diphtheria and croup occurred at ages under five years. This indicates the necessity of attacking the diphtheria problem during this period of infancy and early childhood.

The greater the density of population, the more frequent the opportunity of attack,

and the more rigorous should be the measures taken for controlling this serious condition, which leaves in its trail paralyses, heart disease, and numerous other incapacitating sequelae.

It is an unfortunate commentary upon the rapidity with which new discoveries are accepted and put into active practice to realize that with the increasing facilities for prompt bacteriological diagnosis, with a knowledge of the importance of the early administration of diphtheria antitoxin, with an increasing weight of evidence as to the value of the Schick test for determining susceptibility, together with the known benefits of immunizing doses of antitoxin, that diphtheria, as a disease, still maintains an undesirably high incidence and death rate thruout the world.

While the mortality rate, in the United States, has been gradually decreasing from 1900, the existence of a death rate of 17.9 in 1914 is far higher than is warranted in the face of the degree of preventability of the disease. It is a higher death rate than that of typhoid fever, whooping cough, influenza, diabetes, meningitis, malaria, measles, scarlet fever, dysentery and numerous other diseases, in which modern medicine has attained even less adequate knowledge of the methods of prevention and control.

It is of the utmost importance that health departments, state, county, or municipal, provide a complete program for attacking diphtheria. The continued existence of high incidence and mortality rates betokens a lack of administrative accomplishments, which at least calls for inquiry, investigation, and stimulation to greater and more systematic methods of attack upon the diphtheria problem.

Eyes and Motion Pictures.—During the past ten years, there has been an almost incomprehensible development of the form of entertainment, recreation, and amusement known as the "movies." It has been estimated that there is an average daily attendance at the theatres devoted to the presentation of motion pictures of more than twenty million men, women, and children.

The sudden development of a new industry always brings with it a large number of problems, commercial, economic, social, civic, and hygienic. The low charges for entrance to the moving picture theatres have developed their very unusual popularity. Families, who previously could not afford to go to a single theatre a month, are now found to be visiting them more than once a week.

The fact of the crowding together of large masses of persons in poorly ventilated, unlighted auditoriums presents an interesting problem in connection with the general health of the community and the possibilities of the dissemination of disease thru the consequent congested groupings of people.

G. L. Berry, *Modern Hospital*, October, 1916, calls attention to the relation of motion pictures and eyestrain. He points out, as a result of the various studies and investigations, which have been made, that the possibilities of a deleterious effect on vision exist in the glare due to poor picture screens and the improper radiation of light therefrom. He calls attention to the unhappy influences of improper illumination of the auditorium and the defects in the pictures themselves arising from poor photography, film blemishes, or improper projection. The fact of prolonged concentration upon moving pictures must also be considered as a possible cause of eyestrain.

The fatigue, incident to the rapid accommodation of the eye with the inability to prevent the unconscious relaxation of the ocular muscles, serves to increase defects of vision and produce symptoms indicative of eyestrain. The complete muscular relaxation of the eye is impossible while one is viewing a three or five reel film passing before the eye at the rate of about 70 feet per minute until 3,000 to 5,000 feet have passed in review before the eyes of the interested and emotionally anxious spectator.

If it were possible for the moving picture "fan" to sit 30 feet away from the screen, with a view of the pictures from an angle that caused no distortion; if the projection were regular and free from jerkiness; if the films were not used after their character has been injured by the blemishes arising from use; if good photography were constantly manifest; if the auditorium were lighted by the indirect system of lighting, so that glare were impossible, the likelihood of ocular fatigue and eyestrain would be greatly diminished.

It is possible, of course, that there may be distinct advantages derived by moving picture enthusiasts if they are sensible enough to recognize the symptoms of eye fatigue, such as headaches, itching of the eyelids, sensitiveness to light, and excessive flow of tears. Normal vision is comparatively uncommon. Myopia, hypermetropia, and astigmatism, as well as muscular weakness, may be unknown until frequent visitations to the moving picture theatre call forth the symptoms of fatigue. If those presenting these evidences of defects in the visual apparatus could be educated to the importance of early advice as to the defects, thus called to their attention, it would be possible for them to secure the necessary

glasses or muscular exercises requisite for correcting the weaknesses of their optical apparatus. Such a course of action would conduce to the advantage of the community. It would mean the early correction of defects and would serve to place vision under the control of intelligent ophthalmologists.

In view of the fact that visual instruction by means of stereopticons, projectoscopes and motion picture machines is rapidly growing in favor in educational circles, it is of the utmost importance that school authorities recognize the problems of eyestrain that are involved in these educational methods for children during the school age.

The increasing development of myopia among school children must not be disregarded. The average auditorium or classroom in a public school was not constructed nor illuminated with a view to serving as a place for exhibiting moving pictures. The enthusiasm for visual instruction of this type should not be permitted to disregard the necessity of supplying a hygienic environment for their utilization.

The ability of school children to maintain long periods of concentration, with the necessary rapid changes in visual focus, is limited and extra precautions are therefore necessary to protect the eyes of school children from the dangers of eyestrain, as a result of sustained or too frequent use of moving picture machines in connection with educational methods. It is estimated that 25 per cent. of school children have ocular defects.

Moderate use of the eyes, in connection with motion pictures produced under conditions as nearly ideal as possible, is probably devoid of serious danger. On the other hand, ideal conditions rarely exist and moderate use is an indefinite term.

Lay Misinformation.—The endeavors of lay magazines to disseminate information regarding public health measures merit commendation. There is, however, a responsibility resting upon editors of such publications to secure the assistance of persons capable of giving information which is at the same time scientifically accurate as well as practically useful.

Some magazines secure the cooperation of competent physicians, others avail themselves of the accumulated experience of trained nurses, while still another class apparently disregards the importance of having health articles written by persons who may speak with authority. As an illustration of the incompetence of some writers upon health topics, the following is a glaring example. In the October issue of *American Motherhood* appears a discussion on poliomyelitis with such statements as the following:

"The medical name for it is poli-o-myelitis, and means an inflammation of the anterior horns of grey matter at the top of the spinal cord. At the present writing no report has been made of the germ or bacterium of infantile paralysis having been satisfactorily isolated. A virus or morbid poison transmits the disease. This virus will pass thru the finest filter without leaving a trace of any germ life. The favorite entrance of this virus to the body is thru the nose. It may be conveyed upon unclean fingers, dry portions of it blown about in the dust of the street or house and inhaled, carried on the person of traveling individuals, or brought from afar by the filthy house or stable fly.

As soon as damp or dry particles of the virus enter the nose, they are ensnared by the moist mucous membrane, taken up by small nasal nerves, and borne by these to the brain. Passing thru this brain region they are carried to the spinal column where

an inflammation is set up in the horns or projections near the top."

If the rest of the information dispensed by this magazine is as lacking in sense and as full of misinformation, it is regrettable that this particular portion, at least, of the magazine possesses any readers. Statements of this character are indefensible, save as an evidence of the lack of knowledge of the writer and her unwillingness to admit the ignorance which is thus laid bare.

The Problem of Our Prisons.—In some sections of the country the people seem to have acquired a new conception of the attitude the social organism should maintain towards those of its members who have come into conflict with the established order of communal custom and behavior. This new conception has developed gradually from a realization that social outlawry may, to a large degree, be the result of an irresponsibility having its origin in some actual deficiency in the make-up of the individual, or some real pathologic state which produces mental depreciation or perversion.

With the growing tendency to consider social outlawry a form of disease—a true malady—there has developed a disposition to sympathize with the afflicted, to look on his deviation from the normal with genuine pity and feeling. The growth of this sentiment has been reflected in the conduct of many penal institutions, a more humane spirit being manifested in the supervision of individuals who have been deprived of their liberty. Several of our western states have taken the lead in seeking to make their penitentiaries institutions for the study of criminality, with the object if possible of restoring perverted and abnormal individuals to a state of normality, or a healthy moral and mental status, as measured by their attitude towards—and relation to—the social organism.

It is too early to speak of results. There is a vast amount of accumulated evidence, however, that seems to point unmistakably to the fact that the newer ideas of prison administration are sound and rich in possibilities. At any rate, the progress of civilization and the advances of society make it incumbent on every thoughtful and humane person to give attention to this great burning question of "how shall we care for the inmates of our prisons?" It is a question that no citizen can shirk, for the economic phases of the problem are becoming more and more acute as the costs of government administration progressively increase.

The Crime of New Jersey.—Much of the foregoing was stimulated by perusal of an article which appeared in a recent number of the *New Republic*. The article referred to was written by one who had spent involuntarily some time in the New Jersey State Penitentiary. So full of material for every thoughtful person to digest was this man's story, and the facts given are so awful from the standpoint of official depravity that we have felt it a duty to reprint the bulk of the article. We hope every one of the thousands of readers of this journal will read the tale the author tells of the New Jersey State Penitentiary on page 66. This prison of an enlightened state may be no worse than that of many another state. But if one-half of the facts unfolded are true the people of New Jersey should bow their heads in shame. Mind, we are not singling out the people of New Jersey and holding them up to criticism as worse than the people of many other states. We are referring to New Jersey people because our attention has been called to a substantial description of the awful conditions that are allowed to exist in their penitentiary in this year of Our Lord 1917. That officials, paid employees of a civilized community, could commit the acts and deeds described and year after year go on following the same cus-

toms and practices, is a terrible blot on the conduct of the affairs of New Jersey. There is not one iota of excuse on the part of its citizens. They cannot take refuge in the statement "we did not know." Today in every community *it is somebody's business to know what conditions exist in every institution*. Every year legislatures require full and accurate reports of the way each and every public institution is conducted. Competent people are delegated to make comprehensive inquiries and submit full and accurate results thereof. These reports are printed and given to the public. Here is the obligation of thinking, public spirited people—an obligation they cannot shun without being false to their civic consciences—and that is to read these reports and learn what is transpiring in the public institutions of their state. If these reports are lacking or incomplete, if they fail to give the information they should, *somebody is responsible*. It is for the earnest citizen to ascertain who is responsible for any incomplete or halfway report. There are always plenty of state legislators willing and glad to make a proper inquiry as to any state report.

If any person had taken the pains to look up and carefully study the reports that have been made year after year concerning the New Jersey State Penitentiary, is it probable that the frightful abuses now disclosed would have gone on as they apparently have? There is nothing so wholesome in regulating official conduct, especially in institutions, as the knowledge that someone no matter how inconsequential, is interested and is asking questions.

It would seem to be high time that some questions were asked in connection with the New Jersey State Penitentiary even tho these questions may bring the blush of shame to the faces of many New Jersey citizens as they realize how much of human anguish and suffering they might have saved by evincing the interest that they owed to the honor and fair name of their state.



The Passing of a Great American Medical Editor.—On Saturday, December 30, 1916, there passed away a notable figure of the medical literary world. On that date, Claude Lamont Wheeler, editor of the *New York Medical Journal* succumbed to an attack of bronchopneumonia after an illness of but a few days. In fact, he may be said to have died in harness, as he was attending to editorial duties a day or two before his death.

Dr. Wheeler was born in Montreal on March 5th, 1864, and thus was in the prime of life. He received his academic education at Laval University, Quebec, while his medical education was gained at McGill University, Montreal, from which university he graduated in 1889. For a short time he practiced medicine in Burlington, Vt., where the editor of this journal first made his acquaintance, an acquaintance which ripened into warm friendship, and lasted up to the time of his death.

Twenty-six years ago, Dr. Wheeler came to New York, which was to be the scene of his labors for the remainder of his life, and in 1902 became assistant editor of the *New York Medical Journal*, then under the charge of Dr. Frank P. Foster; on the death of that doyen of medical editors, he became associated with Charles E. de M. Sajous in the editorial direction of the journal.

At the commencement of this brief memoir, Dr. Wheeler was referred to as a notable figure in the field of medical literature and this statement is strictly true. While his medical knowledge was extensive and varied, his literary attainments were perhaps even more pronounced. His versatility was remarkable, and he was a well read man in the widest and best sense of the word. Being excellently versed in both ancient and modern languages, he was able to drink at the fountain head, and this ability showed itself in his writings, which were distinguished by their easy, smooth

style and by his classically pure English. His medical knowledge, his literary talents, his personality, and his temperament made him the ideal editor. These mental attributes and characteristics were reinforced by a striking presence, by genial manners and by the possession of that wealth of tact, without which success as a medical editor or in any other calling is rarely attained. For some time before his death, Dr. Wheeler had to contend with ill health which he met with unflinching courage, and that the quality of his work did not suffer in consequence is shown by the noteworthy excellence of the *New York Medical Journal*, a publication that has long been conceded to be one of the world's great medical periodicals, a result due in no little part to Dr. Wheeler's editorial ability and his unflinching devotion to the highest ideals of the medical profession. In his daily life, Dr. Wheeler was not only charming, courteous and kindly to a high degree, but at the same time, was noted for the wit and humor constantly manifested in his conversation and in his writings.

He was a pianist of no mean order and the owner of a well trained voice of great power and sweetness.

As co-worker, colleague and friend Dr. Wheeler will be missed by a host of those who took the deepest pleasure in his cheery presence, unflinching optimism and helpful association. One never grew weary and bored in his company.

To say, therefore, that the death of Dr. Wheeler leaves a wound that Time, the Great Healer, will not soon repair, only partly tells of the heart ache, sadness and sorrow his passing have brought to those who loved him with all the love one has for an elder brother.

Clean Kitchens, Dishes and Cooking Utensils are of vital importance. Recent investigations with subsequent rigid enforcement of sanitary precautions in public eating places by the Health Department, have brought to light surprising conditions of uncleanness and various abuses in the selection and preparation of food.

These are being corrected by proper regulation. A great lesson should be drawn from the results and applied at home. It is probably true that the care and preparation of food in the average home kitchen is quite

satisfactory; but there are many little points in cleanliness which are often carelessly overlooked.

The kitchen floor is the one more exposed to dirt and contamination than perhaps any other floor in the home. There is more or less constant traffic over it and tradespeople frequently enter direct from the street, bringing in all varieties of refuse—especially during bad weather. Of course these floors are carefully scrubbed at intervals but in between such times they are usually dry swept.

A broom, employed for vigorous dry sweeping of the floor is about the worst thing to have in the kitchen. Dust, although often imperceptible, thus rises and settles upon everything—tables, chairs, cooking utensils and dishes, even though some precaution is observed—and upon food, whether prepared or unprepared, which is usually about the room. In place of the sweeping, a mopping with good hot or boiling water is far better as a cleansing agent, as well as being a preventative against spreading dust and contaminating matter. All persons before entering this room should clean their shoes upon a mat placed in a convenient position for that purpose.

The kitchen should never be "dusted." A moist cloth must be used in going over furniture, walls, woodwork, etc.

Washing dishes has always been the despair of the housewife. The quickest and easiest way always has preference. We can't say that we blame her. Many a man would forego eating from dishes if he had to clean them, especially after a hearty meal when the thought of labor is hateful.

Washing preparations, with which the market is crowded, may have their uses, but plenty of simple boiling water and good soap will accomplish a complete cleansing of dishes and cooking utensils; whereas many of the so-called labor-saving washing devices and their like are rarely of any practical value or utility. A thorough rinsing with boiling water completes the process and insures cleanliness. Boiling water should be the chief accessory in every kitchen equipment at all times.

It is plainly evident that the utmost care and attention should be given to the proper handling and preparation of our foods. Experience has clearly shown that the slightest



CLAUDE LAMONT WHEELER, A. B., M. D.

lapse in the kitchen may lead to the direst consequences. For this reason medical men will do well to neglect no opportunity of preaching the importance of kitchen cleanliness and the proper care of foods.

A Tribute to Dr. Woodruff.—At the recent annual meeting of the American Therapeutic Society, Dr. Thomas E. Satterthwaite paid the following tribute to Dr. Woodruff who for several years was associate editor of *AMERICAN MEDICINE*.

"Charles E. Woodruff, who joined this society in 1914, and died June 13, 1915, was born in Philadelphia, Pa., on October 2, 1860.

Graduating from the Naval Academy at Annapolis, in 1883, and from Jefferson Medical College, in 1886, he entered the U. S. Navy in the latter year and within twelve months the U. S. Army. On his retirement, in 1913, he held the brevet rank of Lieutenant-Colonel. Two military medals for meritorious service were awarded to him.

Colonel Woodruff will be best remembered in scientific circles as an anthropologist and as a sanitarian. Prolonged service in the Philippines furnished him the opportunities for his well known work relating to the effects of a tropical climate on the white race, which was embodied in a separate volume. Out of this was subsequently evolved his *Medical Ethnology*. But *The Expansion of Races* was probably the most important of his books; it is said to have been the most valuable contribution to anthropology since Darwin's *Origin of Species*. Industriously collecting and coordinating scattered data, he brought them before his readers in a simple, intelligible, and entertaining form. Every man, whether physician or layman, who is interested in racial problems as they bear on health, wealth, and good government, should familiarize himself with Colonel Woodruff's broad survey of these topics. Other valuable material that came from his pen was contained in upward of seventy monographs on subjects bearing on military medicine, camp sanitation, and eugenics; of the latter he made a special study.

But devotion to duty was his undoing, for the enervating climate of the Philippines undermined an otherwise vigorous

physique, compelling him to resign from the service at the comparatively early age of fifty-three years, after only twenty-six years of army life.

Colonel Woodruff was a broad humanitarian, endowed by nature with a keen, logical, and inquiring mind, bent on finding light where hitherto there had been darkness. Firm in his convictions, he was equally zealous in upholding them, though tolerant of the opposition that confronts new ideas. Those who differed with him were always treated with consideration, even with courtesy. It was easy, therefore, for him to win the admiration and command the respect of his coworkers. In the front rank of the scientists there is now a gap. Unfortunately, his stay in our society was so brief that few of us had the opportunity of knowing him well. His intimates have paid this tribute to him, that he was a sincere and faithful friend.

Shall the Hospital Staff be Paid?—

Schulman (*New York Med. Jour.*, Jan. 20, 1917) discusses this important question in a rational manner and after considering it in all its practical phases concludes as follows:

"1. It is impossible nowadays for a doctor to be master of the entire field of medicine.

2. Present day diagnosis and treatment are much advanced over those of one and two generations ago.

3. The adequate study of a case by modern methods frequently requires the cooperation of many specialists.

4. At present, for economic reasons, a large proportion of the population cannot avail itself of the best aid that the medical profession is capable of rendering.

5. The situation can be remedied by the establishment of cooperative medical offices, or by the establishment of pay services in hospitals and dispensaries.

6. Hospitals and dispensaries are probably better fitted to render the service, and can do so on a more economical basis.

7. The establishment of such services would not reduce the income of the medical profession.

8. It is to the interest of the general public to stimulate the establishment of such services."



OCULAR ECZEMA IN CHILDHOOD.

BY

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Ocular eczema is a very common and annoying disease of childhood that deserves more consideration than it has been given. It appears in different forms and runs a very indefinite course. In some cases the symptoms are very mild while in others the symptoms are so severe that the little child is confined to the room which has to be darkened, cannot open its eyes, as a result of the photophobia and blepharospasm. The child buries its head in the pillow, is suffering severe pain and is leading a life of misery in early childhood days, and when the disease has, after several years, run its final course, the visual acuity of the child is found markedly reduced and as a result of the opacity of the cornea it leaves in the diseased eye, one eye not infrequently is found in a state of strabismus.

Ocular eczema is responsible for about 40% of all diseases of the eye in children. It is more common in girls than in boys and does not manifest itself in the first year of life. The predisposition of the eye to eczematous diseases usually develops at the end of the second year and increases in rapidity as the child grows older, reaching its acme about the sixth year of life. This period coincides with the period of infectious diseases

of childhood, which is one of the principal predisposing elements in the etiology of ocular eczema. Measles, scarlet fever, pertussis and diphtheria are the chief predisposing factors in the development of the eczematous diathesis. By ocular eczema we understand a group of ocular diseases of a strumous character which have been described as scrofulous diseases of the eye, Scrofulosis is still a definite condition that is recognized by the general practitioner.

There is a tendency at the present time to speak of tuberculosis rather than of scrofulosis. I am still inclined towards the latter as there is not sufficient evidence of the presence of tuberculosis. In the vast majority of these cases the tubercle bacilli are not found and other evidences of tuberculosis are wanting. The Von Pirquet test is not infrequently positive but I think this due to the lessened resistance of the body which is the main and important factor in the causation of the symptoms of the so-called scrofulous diathesis. There is such a condition as scrofulosis altho it is hard to define it, except, by saying that there are lacking some of the protective substances in the blood which permit local pathologic changes in the cellular elements and which not infrequently manifest themselves in the eye or ocular adnexa.

Ocular eczema or scrofulosis affects the eyelids where the margins show various changes; it may affect the conjunctiva giv-

ing rise to some ulcerative conditions and it also affects the cornea. Not infrequently all these tissues are involved in one process of inflammation accompanied by eczema of the face. All varieties of ocular eczema are resistant to treatment but it is the corneal type that gives rise to most serious consequences and misery. Children suffering from scrofulosis are apt to lose a great deal of school time as they are compelled to stay away from school during the process of corneal inflammations and not infrequently after the disease has run its course the reduction of vision as a result of corneal opacities deprive him of the better paying positions and he is compelled to earn his livelihood by means of some manual labor that does not require a high degree of vision. The palpebral form is the mildest, yet it may be very resistant to treatment and may even linger during the whole life of the patient producing no great annoyance but considerable disfigurement. The conjunctival form is easily amenable to treatment altho not infrequently there is a recurrence of the disease which however when not complicated by corneal involvement usually terminates favorably. The corneal form of ocular eczema is the most severe one; is accompanied by severe pain, is very resistant to treatment, recurs very frequently, and makes the life of the child miserable, sometimes for years, and when the disease finally subsides, it usually leaves some small opacities of the cornea behind by which we may retrospectively diagnose ocular eczema of the cornea.

Etiology.—Ocular eczema is caused by scrofulosis or the scrofulous diathesis. Scrofulosis is a condition of malnutrition having a particular tendency to bring about changes in the lymphatic system. Children are the main sufferers from scrofulosis especially the children of the poor that live under un-

favorable hygienic surroundings where the air is vitiated and where the food is not nourishing. These children are very delicate, have pale skin, and the margin of the nasal orifices are somewhat thickened. Their lips are puffy and their numerous lymphatic glands are enlarged. They always present evidence of physical as well as mental sluggishness. The submaxillary, the jugular and the auricular lymphatic glands are swollen. The tonsils are often enlarged and the retropharyngeal glands are swollen. These children are subject to colds and suffer from recurrent catarrh of the upper air passages. The secretion during the catarrhal state is markedly increased and irritates the adjacent skin so that erosions of the lips and noselabial region appears, which later is followed by crustations.

This region is often the seat of ulcerations and fissures which are painful. There is often an oozing from these ulcerated areas which eventually become thickened. The pharyngeal lymphatics become inflamed, hyperplasia of the facial tonsils develops which culminates in a chronic pharyngitis. The edematous condition not infrequently reaches the eustachian tubes and gives rise to middle ear disease. These ears often discharge thru the external auditory canal which eventually corrodes the lower lobe of the ear producing not infrequently painful fissures at the lower wings. There is an increase in the functional activity of the sebaceous and sudoriferous glands which predispose the skin to eczematous infiltrations. The most vulnerable part which is mostly the seat of eczema is the lips, the nose, the lower part of the wings of the ear, the scalp, the eyelid, the conjunctiva and the cornea. Scrofulosis is usually followed by some form of anemia which is easily determined by a blood examination. These children are not

infrequently the victims of tuberculosis. Scrofulosis while it is not tuberculosis is predisposing to tuberculosis due undoubtedly to a reduced vitality resulting from the perverted nutrition.

Scrofulosis as an etiologic factor in ocular eczema is a well established fact but it must be considered only as a predisposing factor and not the exciting element. There must be some ectogenous infection to produce the active inflammatory process. Some microorganism, as yet undiscovered, will probably be found to be responsible for the various types of ocular eczema. This holds good not only of the more severe forms of conjunctival and corneal inflammations but also of the milder type of palpebral inflammations. Several organisms have been found in the eczematous conditions of the eye but none are as yet considered of a specific nature. In the so-called keratoconjunctival inflammations the most frequent microorganism is the staphylococcus, occasionally a pneumococcus is found and not infrequently Koch-Weeks bacillus as well as the diplococcus is found, but neither of these germs can be considered as the active specific cause. Until a specific germ can be isolated the actual causal elements remain problematical. It is reasonable to suppose however that there exists a specific germ that produces this particular form of inflammation. The theory that the disease is endogenous in origin does not stand the test of experience; on the other hand germs carried by unclean hands to the reduced margins of the lid may thrive well because of the reduced resistance of the palpebral tissues.

Palpebral Eczema.—Palpebral eczema is a manifestation of scrofulosis and is a common disease of childhood and not altogether rare in adolescence but in adult life it is merely the chronic remnant of an inflam-

matory process that began in early childhood. It rarely begins after the age of twenty altho it may be protracted into adult life and even old age. The disease manifests itself by changes in the margin of the lid. The lid margin appears to be thickened, congested and scaly. There are minute little abscesses around the hair follicles, these little nodules eventually break down and are followed by ulcerations and pustulation. The discharge from these pustules coagulates forming crusts beneath which the erosions remain unchanged. If the disease persists for a long time the eyelashes fall out and a slight entropion may result. The lashes may never grow again when the hair follicles have been destroyed; on the other hand they may grow back in a faulty position and give rise to constant irritation of the cornea. Palpebral eczema runs a chronic course if not taken care of at the outbreak of the disease. It may linger for years producing various changes in the contour of the lid. The protracted form is usually accompanied by eczema of the scalp and is very resistant to treatment.

Eczema of the Conjunctiva.—Conjunctivitis eczematosa is a disease of childhood altho occasionally may manifest itself in adult life and even in later life, middle age, and old age. In later life however it runs a milder course and is easily controlled by proper treatment. In childhood it not infrequently runs a protracted course and recurs quite often. It is frequently complicated by corneal involvement. The various exanthems act as the exciting cause altho the underlying basic element that predisposes to the disease is the scrofulous diathesis. The disease manifests itself by the formation of one or several small nodules on the scleral conjunctiva situated usually at the corneo-scleral margin. The disease dif-

fers from other conjunctival inflammation in the character of the discharge. Clinically the disease is easily diagnosed by the simple fact that the inflammation is confined to the immediate area of the nodule where the adjacent conjunctival tissue is red and congested while the rest of the conjunctiva is in a state of quiescence and has a normal appearance. This nodule is usually small unless several of them coalesce forming a larger one. It is confined to the conjunctiva and does involve occasionally the cornea. When the cornea is involved we speak of it as kerato-conjunctivitis.

Clinically this disease differs markedly from the eczematous condition of the cornea where the disease begins in the cornea and only secondarily involving the conjunctiva by its milder course and by the rapidity with which it responds to treatment. When the disease is in the conjunctiva the nodule is about the size of the head of a pin which first becomes vascular; then pustular in character, when it ulcerates it begins to heal and leaves no scar behind it after the disease has run its course. It may however recur soon after the ulcer has healed or while it is the process of healing. It may however soon yield to treatment. When it recurs and the new nodules are formed they go thru the same process lasting one or two weeks; then disappear again leaving no trace behind them. As long as the cornea is not involved very little damage is done to the eye, altho the little patient suffers not only from the inconvenience but is often compelled to stay away from school. This disease is also accompanied by some other eczematous condition of the face, head or lips and is often associated with the palpebral form when we speak of it as blepharo-conjunctivitis.

Corneal Eczema.—Of all the various

forms of ocular eczema the one affecting the cornea is the most frequent and the most serious one, for it always leaves opacities behind after the disease has run its course which markedly reduces the visual acuity, while during the process of the disease the symptoms are so severe as to make the life of the child very miserable indeed. Corneal eczema begins as a marginal keratitis. Small ulcers appear at the periphery of the cornea which run a usual course of about three weeks; when under treatment the ulcer heals leaving a small opacity which is however so situated as not to interfere with vision. Even after several recurrences the pupil still remains free from any opacity and consequently there is reduction in the visual acuity. These are the milder forms of corneal eczema. In the severe forms of this disease the corneal infiltration is most marked in the central portion of the cornea where an ulcer develops, the treatment of which is very resistant and after weeks and sometimes months when the ulcer heals it leaves a marked central opacity, that greatly interferes with vision. This form of the eczematous ulceration of the cornea is subject to recurrences and recurs several times during the year until the child gets to be about 8 years old. When the disease is arrested there is a marked reduction in vision in consequence of the corneal opacities which may sometimes interfere with the normal development of the child. The most annoying of the corneal affections is the so-called fascicular ulcer where the ulcer is like a narrow canal running from the center of the cornea to the periphery carrying in its furrow a large amount of blood vessels. The symptoms are usually very severe, the blepharospasm is very marked, the child cannot keep the eye open, the lids are swollen, the margins are ulcerated, the pain

is very severe and the child presents a pitiable picture of a sufferer. The condition lasts for months and leaves a marked opacity behind. Corneal eczema is often accompanied by the formation of blood vessels on the corneal surface, pannus eczematosa. They are easily distinguishable from trachomatous pannus and yield more readily to treatment by undergoing complete resolution. Corneal eczema may also begin in the deeper layers of the cornea which gives the cornea a uniform gray and yellowish color. The corneal surface over the infiltrated area is deeply stippled. The infiltration finally breaks down and an extensive ulcer is the result and when the ulcer is healed a very large central opacity is left that interferes with vision. Blindness in this disease is very rare but the reduction in vision is very frequent.

Treatment.—The treatment of ocular eczema must be local and general, hygienic and medicinal. The course of a rigid treatment must be persistently pursued if a cure is to be established. There must be no relaxation until the end is accomplished. It is of course very hard to get the intelligent cooperation of the patient; this is especially the case in the milder types of the disease. In the severe form of corneal eczema it is sometimes possible to impress the patient or rather the parents of the little patient with the gravity of the situation and thus get their cooperation in the effort to bring about a cure. But even in these cases the patients completely relax as soon as the inflammatory symptoms disappear and not infrequently as a result of this relaxation there is a relapse of the disease which might have been prevented by a prolonged careful treatment. Both physician and patient must appreciate the fact that ocular eczema is very resistant to treatment

and only a prolonged, intelligent and systematic course of treatment will bring about the desired result.

Hygienic Treatment.—It is essential that scrofulous patients suffering from ocular eczema should follow a strict hygienic rule in every detail. They must live in dry rooms. No treatment will avail if the patient lives in damp atmosphere. Personal cleanliness must be enforced. The patient should be given a daily bath of a medium temperature. A cold sponging over the spine after the bath may have a good stimulating effect. Alcohol rubs after the bath are a valuable adjunct in the corneal type of the disease. Children should have 12 hours' sleep in a day and young adults should get 10 hours' sleep daily. Since most of the sufferers are children they should be kept outdoors the larger part of the day. Fresh air is an essential therapeutic element. Of course when the photophobia is marked and there is marked blepharospasm present this is not always possible. The child's eye should be protected against the sun or the child be kept in the shade. The hands of the child should be washed very frequently so as to prevent further infection to be carried to the eye. Crowded places must be avoided during the course of treatment. Even in adults it must be enforced even in the milder types of eczema of the lids. Smoky places should be avoided as must theaters, moving picture places and dancing halls.

Dietetic.—Regulation of the child's diet is a very important factor in the treatment of these cases. The orders must be explicit and mothers must be instructed to follow them. It is absolutely necessary to get the cooperation of the mother in matters pertaining to diet. Milk should be given in abundance and frequently. In the acute stage of corneal ulceration when the

blepharospasm is very marked I rely chiefly upon a milk diet. Cereals with sweet cream may be added to the morning diet. Soft boiled eggs and toasted buttered bread is a good article of diet. Meats should be given sparingly if at all and only once daily. During the acute stages of corneal ulceration no meat should be given. Sugars of all kinds should be prohibited. Candies must not be given. Pastries of any kind should be prohibited. Vegetables should be given in each meal. The regulation of diet should be kept up for months even after the irritative symptoms have subsided. Beverages should not be given.

Local Treatment.—Eczematous blepharitis can be treated locally by medicated ointments, massage, electricity; occasionally surgical means are necessary. A good ointment for the blepharitis is:

Zinci Dioxidi gr. i.

Petrolata 3ii.

Apply locally.

I use very frequently the following formula:

Hydrarg. Ammoniata gr. i.

Adrenalin 1/1000 gtt. x.

Lanolin 3iii.

Apply locally at bed time.

Where the conjunctiva shows some congestion I brush the conjunctiva gently with a 1/2% solution of silver nitrate.

Electricity in the form of a high frequency current applied to lid twice weekly has in some cases given me good results where there is considerable pustulation. If medication doesn't bring the desired result I have recourse to surgical means, namely, a complete epilation of all the hair of the lids, repeating the process as soon as the hair grows back. This helps us to evacuate the abscesses in the hair follicles and not infrequently if the treatment is prolonged and accompanied

by electricity and massage a cure can be obtained. The local treatment must be followed up by general treatment. Hypophosphates, iron iodide, and arsenic in the form of Fowler's solution are good drugs to employ. Occasionally thyroid extract will bring good results. The most important problem connected with ocular eczema that confronts the physician is the treatment of the ulcerative conditions of the cornea. In the lid conditions and even the mild conjunctival conditions we are not dealing with patients that are seriously annoyed or conditions that will endanger the sight of the patient, but the corneal conditions are not only serious as far as sight is concerned but give rise to severe and excruciating pain, photophobia and blepharospasms that require immediate and careful attention. In a general way we must say that the treatment is local, general, medicinal and surgical. The therapeutic agents employed locally are first atropin. One drop of a 1% solution should be instilled three to four times daily. The eye should be irrigated with a mild but warm boracic acid solution. Calomel powder insufflated by the physician is a well established therapeutic agent in the treatment of eczematous ulcerations of the cornea. I believe this to be purely empirical altho in many cases it seems to give good results. Hot compresses are an excellent remedy to use to hasten corneal regeneration. It also seems to have some effect upon the blepharospasm. If there are any ulcerations at the angle of the lids they are best treated by the application of the silver nitrate stick cone as two applications will cure the fissures and excoriations. When the blepharospasm is very severe a few drops of cocain applied may cause a relaxation of the orbicularis. Sometimes the entrance of a little air into the conjunctival cul de sac will cause

the eye to open. Not infrequently nothing avails in the endeavor to relax the spasm. Cold sponges over the spine followed by an alcohol rub are very useful both for the blepharospasm as well as a general therapeutic measure. I usually give one ounce of absolute alcohol to be rubbed in after a bath daily. Internally, of course. Cod liver oil hypophosphites, iodides, arsenic and iron are essential agents. Many cases will get well under this treatment, while others will not. It is then necessary to have recourse to cauterization of the ulcer. Ordinarily carbolic acid or trichloroacetic acid is a useful agent. Children however have to be anesthetized before the application can be made. The best agent for cauterization is the electrothermo-cautery. It is more efficient and can be used with better effect. It should be used in all fascicular ulcers and the entire length of the vascular canal should be carefully cauterized. Not infrequently even this procedure is insufficient to get rid of the vascularization and a peritomy is indicated. It should however be remembered that no matter what agents the physician will employ some cases will resist treatment and the disease must run its course and the physician can only watch and mitigate the symptoms. The severe cases should be treated in a hospital where all care and hygienic rules can be enforced. The milder cases are better off at home and in the open air. Some cases have been reported cured by tuberculin injections, and considering the fact that a Von Pirquet test is positive in a large number of cases, this treatment would seem to have a rational basis. In my hands, however, I do think it has shortened the course of the disease. The milder cases did well under it but they do well under ordinary treatment; the severe cases of the fascicular type were not benefited by the tuber-

culin treatment. I have in fact abandoned its use in the treatment of corneal ulcerations in children. The fact is that we have as yet no specific agent for the treatment of these conditions and children still suffer great pain and annoyance and often must lose considerable visual power. Until some specific agent is found all we can do is follow the outlined treatment and a continued and prolonged treatment, even after the inflammatory symptoms have subsided, is the only safeguard against recurrences.

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CHAOS OF CAUSE, CURE AND CULTS.

BY

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During the past few decades there have arisen, and been promulgated, numerous alleged "schools," "systems," "sciences," "philosophies" and other schemes of caring for the sick, nearly, if not quite, every one of them being based upon, or built around, a pretended discovery of the *one* cause of all disease and the necessarily correlated *one* therapeutic measure which, alone, can be, must be, and is the sole remedy or panacea for all the ills of human flesh.

Separately, or in the most inconsistently incongruous combinations, practically every one of these cults has sought legislative approval of their operations in the shape of enacted laws providing for the issuance of licenses by some created board or body authorized to grant such permits upon the presentation of flimsy evidence of the possession of more or less nebulous qualifications; and the until-now-unsuccessful ones

are still annually storming legislative halls, demanding, beseeching or praying that they be granted leave to ply their trades, since, in the absence of such endorsement, their work is clearly contraband—and they are constantly being made to understand that “the way of the transgressor is hard.”

In attempting to support the justice of their claims for legal recognition, two stock arguments are always put largely in evidence—*first*, that they actually cure disease, this averment being not infrequently substantiated by the voluble, if not valuable, testimony of numerous cures; and, *second*, the plea for “medical freedom.”

If in the past, they, to whom has fallen the thankless task of attempting to protect the unfortunate sick from the operations of impostors, incompetents and pretenders, had disclosed to committees and legislative bodies a full view and clear perspective of the whole situation, the partially—and wholly—unqualified “limited practitioners” who are now by lawful authority permitted to do a truly “limited” measure of positive good and an unlimited amount of harm, would have been shown the necessity of properly equipping and qualifying themselves before essaying the healing art; and if this shall be done in the future, fewer legislators will be befogged, befuddled, confused and duped by vicious conclusions deliberately drawn from designedly deceptive premises.

Conceding, because it is indisputably true, that not a few cures occur in the practices of these sectarians, let us see what force that fact carries as an argument for legalizing their operations.

To every individual who is willing to testify, “I was sick, and regained my health through this, that or the other means”—whether those means be called by the prac-

itioner, drugs, medicine, electricity, treatment, manipulation, adjustment, suggestion, thought-force, prayers, divine power or what-not—the following three propositions must apply without exception: *First*, the patient either believed himself to be sick, or else he did not so believe; he was either veracious or untruthful; *second*, if he was honest and really believed himself to be ill, he either was actually sick, or else he was deceived; *third*, whether he was actually, or only virtually, sick, if he believed that he recovered health under the care of another, that change came about either as the result of, or independently of, any assistance from the second party or the means or measures employed by him.

Practically every individual practitioner of every cult will most emphatically and positively declare that his sect's theory of disease cause and cure is the only possibly true and correct one; that all others are necessarily and absolutely absurd and inconceivable—but, of course, the despised “medical doctor” is so ignorant, and his ideas are so vicious, as to be simply unthinkable. In numerous laboratories the most exactly measured and timed and the most carefully controlled experiments, repeated an almost infinite number of times by thousands of investigators in many parts of the civilized world with infallibly uniform results when working under like conditions, have time upon time unmistakably demonstrated the sectarian's fallacy; yet he will, no matter to what “school,” “science” or “philosophy” he subscribes, calmly proceed to discount and discredit all of this, and *prove* the infallible and incontestable correctness of his contention by trotting out an array of cured patients. The “hepatopath,” the “nephropath,” the “cardiopath,” the “gastro-path,” the “psychopath,” the “spinopath,”

etc., each is the only correct one and all others are necessarily wrong—in *proof* of which, witness his cures.

Now what do these cures prove? Since they all produce, and rest their cases upon, identically the same kind of evidence of about the same value and volume, will any one, or any number, of the exponents and practitioners of any of these cults or sects kindly step forward and conclusively show that all of their cured patients were: *First*, honest in first believing themselves to be sick; *second*, that they were actually, and not imaginarily, sick; and, *third*, that they unquestionably regained health thru, and solely as the result of, the practitioners' ministrations: and, at the same time, will they indisputably show that every patient ever treated, and supposedly cured, by any other means or method was either dishonest in pretending to have been sick and cured; or, if honest, that he was deceived and was not sick at all; or, if honest, really sick, and cured, that he recovered irrespective of, and not as the result of, the care he received?

They do not undertake such demonstrations with any more alacrity than they herald their failures to cure and the inexcusable and immeasurable harm they have done by preventing patients from receiving the different and clearly indicated—at least clearly indicated to any one capable of discrimination and not too sordid to exercise that ability—treatment which they should have had.

If, then—and facts too numerous to catalog establish the correctness of the assumption—more than one method of treatment cures patients of diseases, is it not highly probable, even in the absence of undeniably positive demonstration, that the cause of disease is multiple rather than

single; and is it not as clearly inferable that treatment, to be successful, must vary as the cause and condition?

Granting, then, the contention of the last paragraph, and it is incontrovertible, does it require any argument to show the folly and danger of permitting to practice the healing art or any of its branches, in any manner, "limited" or unlimited, one who holds to the impossible position of all disease being due to but one cause and relievable by but one measure? Rather, since the cause of disease has been shown by the sectarians themselves, if it had not otherwise and long before been positively demonstrated to be, protean, is it not the part of wisdom for the state to restrict the practice of the healing art, limited or otherwise, to those who have shown the possession of adequate knowledge of the general, in contrast with the limited, structure and functions, normal and abnormal, of the human body?

The clamor for "medical freedom" suggests the inquiry why we hear no cry for "plumbing freedom," or "freedom" of any other legally regulated occupation.

A man may know how to "wipe a joint," but that doesn't make him a plumber nor fit him to undertake a job—yet there is no loud complaint about favoritism, oppression, persecution, etc. And, simply because he may not be laying pipes or setting basins, this lead-worker and would-be-plumber does not have the effrontery to pretend that he is not working as a plumber; nor does he insist that a separate law be passed for the licensing of "joint wipers," because he is not qualified to be a plumber and may not want to take time and trouble to so fit himself. He is not prohibited from working as a plumber; he is simply required to show his knowledge of, and familiarity with, the general principles and practice of that trade,

and then he uses his judgment in fitting means to ends in each specific instance.

Queer, isn't it, that almost anybody, anywhere, will instantly admit the wisdom and public policy of regulating the plumbing and other trades that touch property values? But when it comes to protecting human flesh and blood from incompetent meddlers, we are harangued about the sacredness of personal liberty, and the attempt to curtail freedom of choice and compel the sick to swallow "poisonous drugs" at all events, all at the behest and hands of, and for the sole benefit of, the criminal and ignorant "medical doctors."

Yet, so far as I am able to learn, no state pretends to dictate into whose care the sick man shall commit himself, or be committed; nor does the state attempt to prescribe how the patient shall be ministered to by the minister—the means to be employed being matters for the discretion and judgment of the attendant, and the acquiescence of the patient; the regular physician is not required to prescribe according to the teachings of the eclectic, nor is the homeopathic practitioner compelled to subscribe to, and act according to, the tenets of the regular school. All that is demanded, is that those who, in any professional capacity or for pay, minister to the sick, shall possess an adequate knowledge of the body, its structure, functions and diseases. Knowing how to recognize and correct only one single kind of defect or fault of the body, or anything less than the required standard, makes any practitioner an unsafe attendant, no matter what measure or means of relief he applies.

The implication, or inference, that religious freedom is, in any possible way, analogous to so-called "medical freedom," is so absurd as to be ludicrous.

For the sincere, strictly religious, con-

victions of every other individual I have the utmost respect and the largest measure of tolerance; and I expect, of course, the same consideration for myself. Yet, however firmly fixed and positive any one may be as to the truth and correctness of his religious beliefs, it still remains a fact that religion is a "system of faith and worship" which deals with a purely *speculative* and wholly *immaterial* problem, in the solution of which one man's convictions are as good—at least for himself, if not for his fellow—as any other man's, and not one whit better.

But the healing art is concerned with living, pulsing, animate, sense-perceiving and sense-perceivable *matter*.

All knowledge comes to us by the way of, or through, the medium of our physical senses. No man lives who can demonstrate to the physical senses of another that his religious beliefs are correct and the other's untenable; nor can the dissenter disprove the first man's contention.

The existence or non-existence of, and our relations to, an assumed-to-exist Deity, our origin and destiny, can not be demonstrated to be other than matters of belief, any form and shade of which is as tenable as, and not more so than, any other. But a fractured bone, a suppurating and gangrenous appendix or a gasping child whose throat is filled with diphtheritic membrane is a physically demonstrable fact which is not modified, mitigated, dissipated nor disposed of by any *belief*.

In the province of pure religion, belief, faith and conviction are finalities for each individual, and for that one alone, from which there can be no appeal. But the structure, functions and derangements of the living body are very *material* facts and phenomena quite largely, if not wholly, demonstrable to the average intellect thru

the physical senses, and concerning which belief plays small part.

Whether one may, or may not "believe in germs," that state of mind in no way changes nor affects demonstrable, and repeatedly demonstrated, facts. The precision with which a guinea pig, or a rabbit, may be infected, and caused to die, by the germs of any selected disease; and the certainty with which the infectious process may be combatted and neutralized, and the animal restored to health, all at the pleasure of the experimenter, are in no sense matters of belief, but matters of fact.

The province of religion is meta-physical, its phenomena are subjective, and belief must be its guide. The problems of science are physical, they deal with objective phenomena, and demonstration marks their solution.

112. West 71st Street.

ANTECEDENTS OF HIGH BLOOD PRESSURE AND NERVOUSNESS: THE TREATMENT.

BY

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Of that type of high blood pressure which is not accompanied by sclerosis of the blood vessels or renal cirrhosis there are some features both diagnostic and therapeutic not generally grasped. Very often the first symptoms of patients with increased vascular tension are referred to the nervous system. Peripherally, the patient may complain of heavy or numb sensations, es-

pecially in the feet and back; or there may be painful sensations like tingling, burning, itching, or ringing in the ears, specks before the eyes, or merely a general discomfort. Centrally, we may find dizziness, nausea, headache, or more often merely a dull thick feeling with inability to concentrate and torpor during the day. Another frequent symptom is preternatural wakefulness in the early morning, sometimes with irritability during the day. There may be even phobias or obsessions, especially of the pessimistic or melancholic type, referring to bodily or mental health. Loss of memory is not an infrequent symptom.

It is symptoms such as these which enable the neurologist, who is in the habit of analyzing minutely even the subjective symptoms of his patients, to gain insight into their pathogenesis.

The clinical composites of which the above symptoms are among the commonest materials are sometimes unaccompanied by arterial hypertension, but their pathogenesis is essentially the same irrespective of this. Indeed the hypertension itself is merely a symptom of the common pathogeny.

I append two cases which illustrate this point:—

Case I. Migraine resembling petit mal due to metabolic disorder.

A bacteriologist, aged 30, was referred in the spring of 1912 by Dr. Paul Johnston, because of attacks he calls "bilious" (but not accompanied or preceded by constipation) which produce headache, preceded by numbness and pricking in the fingers, followed by dizziness, mental confusion and foolish talk of paraphasic type, without loss of consciousness. These attacks have occurred every two or three months since the age of 22. They are of very short duration. There were no scotomata, but they were formerly accompanied by vomiting. The headache is of the splitting kind, lasts all day, and is followed by dullness and slowness of thought the day following. The

capacity to concentrate his thoughts is increasingly impaired even between the attacks. He is at times irritable. He has no bad habits, and apart from these attacks he is well and strong.

He received a blow on the left side of the head as a boy and there is still a dent in the left parietal region, upon which side the headache more often occurs. He has a large appetite, which he says he controls; but he eats meat thrice a day, although he says sparingly; takes no alcohol. The blood pressure is not raised, the reflexes and sensibility are normal.

Treatment. He was given the low protein "standard" diet. He wrote me the following winter, "Since I have reduced the amount of protein in my diet and increased the quantity of vegetables, I have had no recurrence of those spells." Dr. Johnston informs me that he remained well to date, two and a half years later.

Case II. Metabolic psychasthenia.

An engineer of 38, referred by Dr. Atkinson, a powerful, energetic man, formerly accustomed to active work, had been unable for months to concentrate upon the office work to which he had confined himself for over three months. Previous to this he had been much less active, and latterly he had been very much worried by an official inquiry into a contract for which he had been mainly responsible. For no cause known to him, he feels a dread in the mornings, and an indecision in business matters is now realized to have been present several months. There was no syphilis, nor any other organic disease, and he took no alcohol. He had been improved by three weeks in the woods, during which he was very somnolent, but relapsed at once upon return, and could hardly stand his morning suffering. There was no insomnia.

Physical Examination. The reflexes were rather active, but there was no other objective change in the lower neurones; there was no amnesia; the sexual hygiene was normal. He was much depressed, and longed to go away from it all for a year, which he could well afford to do.

Treatment. He was sent for three weeks into the mountains. This time he fully recovered, on account of the light diet which he took. Breakfast and supper were of milk and fruit, and his midday dinner was

vegetables and six ounces of meat; after a few days, cereals were added morning and night.

Fallacies About the Causes of Arteriosclerosis.—Such cases and many others with hypertensions lead me to assert that the common attribution of arterial hypertension to alcohol is a myth. Alcohol, on the contrary, not only lowers vascular tension and dilates the heart, but interferes with the assimilation of the proteins upon which this disease depends.

Another commonly held notion which I believe to be erroneous is that as age advances, the blood pressure should do so also. This leads clinicians to look with no concern upon systolic blood pressure of 140, and even sometimes 160 in a person no longer young. This opinion is based upon the fallacious reasoning that what is common must be healthy, irrespective of the environmental conditions. It is no more reasonable than was the former acquiescence in the presence of an animal parasite on the skin of everyone. On the contrary, hypertension is always a sign of deterioration, and its causes should always be sought for, and if possible met. This can be done, unless organic changes have occurred to which hypertension is a permanently needed response. But even age is no indication that this is a fact; it is always necessary to test the patient's reaction to treatment, for this condition illustrates forcibly the old saw "*curationes naturam morborum ostendunt.*"

The Cause of Arteriosclerosis; Its Cure.

—The pathogeny I believe to be improperly metabolized protein; and this opinion is supported by the remarkable success of a treatment which while stimulating metabolism, at the same time reduces the load both of albuminoids and extractives. This I accomplish by imposing a diet based on the Chit-

tenden standard of 50 grammes protein a day, supplemented by abundant addition of the alkaline salts of the vegetable acids in the natural combinations occurring in fruits and vegetables. Metabolism is further aided by exercise appropriate to the age and cardiovascular condition, and by hydrotherapy and massage adapted to the individual constitution dealt with.

Conventional Treatment Injurious.—By these measures the disease is attacked at its source, a much more rational procedure than neutralizing its effects by cardiovascular depressants such as nitrites, or than by dealing with symptoms as by narcotization, even with bromides, or by the giving of strychnine, digitalis, caffeine and so-called tonics in a vain endeavor to whip up jaded organs.

Purgation Inadvisable. Even forcible elimination by cathartics I believe to be a great mistake, as it disturbs the proper digestion upon which healthy metabolism depends. Constipation, which is very common in these patients I have never yet failed to remove without any stimulating cathartics whatever. The intestinal atonia with which the patients so often suffer may be removed within two weeks by abstention from purgatives. During this period it may be necessary to aid evacuation by massage or even by enemata; while the standard dietary affords enough cellulose and fibre to dilute the feces to a bulk sufficient to arouse peristalsis without at the same time straining the capacity of the digestive glands to deal with the large amount of fermentable food which would be otherwise required.

A Model Standard Low Protein Diet.

The following is the diet given:

In the morning upon waking, 5 to 10 ounces of hot water containing 10 to 20 grains of sodium bicarbonate or potassium citrate. Half an hour later:

Breakfast. A large plate of fruit and milk or cream, followed by abundant cereal and milk with bread and butter. No meat, eggs or fish. Wait five hours.

Dinner. Not more than four ounces of meat or fish, which must be quite fresh, a very large plate of green vegetables, potatoes sparingly, and nothing more than a taste of sweets. Five hours later:

Supper. May be a repetition of breakfast; but succulent vegetables may replace the fruit, and macaroni or a similar dish may be substituted for the cereal.

Thirst and hunger between meals may be satisfied by water and fruit about one hour before a meal or during the night.

Abstain from meat juices (gravy and soup), gelatine, coffee, tea, cocoa, salt and strong condiments, alcohol, pastry.

All starches and meats well cooked.

Fresh vegetables not over-boiled, e. g., a cabbage divided into 4 to 8 pieces to be put separately into boiling water for only eight minutes *without meat or salt*.

Case VI. Vertigo with Hypertension from Hyperproteosis. An illustration of the need of more radical treatment in some cases is the case of a congressman, aged 57, referred by Dr. Hardin, March, 1912. His complaint was dizziness and trembling on walking. However, these symptoms had first occurred on his graduation, and again 15 years before I saw him. On each occasion he recovered by physical labor on a farm. They have occurred from time to time since. Being advised that they might be due to an error of refraction, he saw Dr. Wilmer, who gave him prism exercises, without benefit. The vertigo so alarmed him that latterly he never went out unaccompanied.

Intercostal neuralgia had troubled him, especially when tired; and troublesome constipation had caused him to take purgatives daily. The physician who sent him to me recommended a course of baths; but these did not remove the symptoms, which, however, were always relieved by a hot bath

and by whiskey. He was a very hearty eater and an excessive smoker.

Examination showed only some exaggeration of the deep reflexes, failure of the right plantar, abdominal and cremasteric cutaneous reflexes. The motility was normal except for a slight lack of firmness in the gait. Sensibility was normal, and the pupils reacted and converged well. The heart sounds were clear, the second being somewhat accentuated. The systolic blood pressure, which a year before had been 190, had been reduced under the care of the physician who referred him, to 160 when I examined him. He exuded an unpleasant odor of sour tobacco. Physically he felt dull, as a rule, but worried much and felt very restless at times, especially after exertion.

The diagnosis was toxicotic hypertension. The prognosis was good. The treatment consisted of limitation of tobacco to three cigars a day, cure of the constipation by special diet, removal of the toxic condition by this special diet, aided by a course of baths to favor cutaneous action, and exercise in moderation to increase metabolism.

As a result, by April 18th, the systolic blood pressure was 130, and he was rarely dizzy. A favorable result, however, caused him to exceed dietically once or twice, so by April 25th several dizzy attacks had occurred. The blood pressure, however, was only 124 that day when I saw him. The instructions were emphasized, so that by June 2nd, with blood pressure 122, there had been no vertigo. On June 23rd, blood pressure was 124, constipation induced vertigo again; and it occurred once more on July 11th as a result of oversmoking. (Blood pressure was only 120 when I saw him).

His complexion had improved, his eyes became clearer, the accentuation of the second cardiac sound had disappeared, and he was able to perform his duties like a normal person. Thanks to an earnest and intelligent wife, who sees to his diet, this patient remains well October, 1916.

Psychological Factors.—I have said nothing of strain and anxiety as factors in the causation of this disease, for I believe their effects are purely secondary in that they interfere with the vegetative functions, which of course disorder the metabolism.

Only, however, if there is a protein overload do we obtain the conditions required for the disease. Innumerable cases of chronic anxiety fail to develop hypertension or its antecedent, and the disease often occurs in persons of sanguine or placid disposition and contented life as in the case of the congressman. In the case of the engineer, not only did the causes for his anxiety remain, but he was cured without any psychotherapy, merely by dietetic measures.

1705 N Street.

SHALL ACUTE VENEREAL DISEASES BE REPORTED?

BY

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One time I knew a man who claimed to have changed his politics seven times, every time, he declared, "for the best of reasons." In like manner, I have changed my views concerning the reporting of venereal diseases one time, and shall state what I believe to be substantial reasons for so doing. As to the precise manner of reporting such infections I have no definite plan to present, but the fact that such diseases are a grievous danger to public health can not be denied by any one familiar with present day conditions.

The illustrations that I shall present are taken from life and every one of them is true to the last outline.

A young man applied to me for treatment for a well-defined primary syphilitic lesion involving the glans penis and sections of the prepuce. Three weeks after beginning the treatment he called with an acute gonorrhea which he freely confessed to having contracted a few days before with an unpro-

tected chancre in full blast. To my intense disgust, he admitted having continued his liaisons without interruption. It would not be saying a great deal to affirm that there are thousands of men now behind prison bars with far higher moral ideals than the shameless rake I have just mentioned.

A handsome young man of 26, whose physical outlines were the admiration of all who have an eye for perfection of the human figure, boasted with entire freedom of his innumerable conquests. I protested to him that he was nothing but a carrier of gonorrhea, to which he responded that "turn about was fair play," and that he supposed that he was as much entitled to give gonorrhea as he was to receive it! His known character was such that decent society shunned him as it would a venomous snake, but his power to impose his "charms" upon the unwary may be inferred from the boast that he made of having led fifteen girls astray within two years! He told me of the foregoing as tho they were events he was proud of. Notable triumphs, surely!

Another young man whom I was treating for primary syphilis called one afternoon to introduce his bride, a perfectly unsuspecting young woman whom he had married two days before. He explained to me that the girl was wealthy in her own right and that if he had postponed the nuptials he feared that she might fall into the hands of a rival whom he appeared to hate profoundly. Within a year an apparently healthy child was born, but another year revealed unmistakable evidences of syphilis in the whole family. The young mother happened to learn the facts, whereupon she took her diseased baby and her bank account and left her money-loving husband to shift for himself. One of my colleagues told me some time later that he had removed two large pus

tubes from her and that she was practically a physical wreck for life.

A man of forty, as dirty a rake as ever came out of the jungles of a great city, told me that while he had contracted gonorrhea at least once a year for twenty years, he felt sure that he had never "given the disease to any woman." Certainly not, when he had gleet all the time, acute gonorrhea most of the time, and was having sexual relations promiscuously all the time. It ought to be stated that he had syphilis before he was thirty and chancroid at least once. What surprised me was that he afterwards married a woman of high character and settled down to decent living. So far as I know, his wife never became infected from contact with him, altho the couple were childless.

A young man of about thirty, thru business talents of a high order, had risen to unusual prominence and influence in a well-known firm of manufacturers. Altho his income was large, his fondness for an assortment of mistresses generally kept his nose to the grindstone and his feet in very hot water. One night I was summoned in great haste to the apartment of one of his lady friends and found him suffering from shock due to bleeding, the result of a pistol shot wound that had penetrated a pectoral muscle, broken a rib or two, but had not entered the cavity of the chest. It was, as a matter of course, a sheer accident, as such things usually are, and great was the rejoicing when I assured all concerned that I expected a prompt recovery. A few days later the mistress called to see me, desiring above all things to learn whether she was suffering from gonorrhea, adding most significantly, "if I am, I'll take better aim next time!"

Let it not be supposed for an instant that men are the only offenders in these lines.

Some women are as heartless and as shameless as Madam Pompadour. Knowing themselves to be the victims of venereal infection, they accept the attentions of men only to scatter broadcast diseases as deadly as any known to mankind. Not always for money, let it be understood. One day I told a little coquette that she ought to be locked up as a menace to public health, when to my disgust she justified her conduct on the ground that she did not "degrade" herself by accepting money for her promiscuous irregularities. I have known some young women, always active in social circles, who carried around under purple and fine linen a mass of filth almost beyond belief. One day I was consulted by the daughter of a man of nation-wide influence. After making an examination, I said rather haltingly, "I do not really understand your condition." To which she coolly replied, "Are you sure it is not gonorrhea?" So widespread had been the field of her operations that she could not even pretend to name a probable "suspect." She assured me that she had no thought whatever of ever getting married and meant to "have a glorious time" while still in the bloom of youth. A few years later I learned that she had contracted syphilis from eating from an infected spoon or fork "at some country hotel."

A modest country girl, who had been raised in a clean home, went to a great city and obtained a creditable position. The glitter and tinsel of metropolitan life not only unsettled her mental equipoise but broke down her moral fibre as well. Within a year she was under full headway for ruin and never stopped till she had sunk to the lowest depths of debauchery. I asked her once whether she supposed that fifty years would be enough to eradicate all the disease she had set going in the world, to which she replied, with a cynical smile, "I guess not."

No, some of the most brazen, unfeeling and incorrigible disease carriers to be found anywhere are women. They deliberately abandon a life of respectability for one of boundless dissipation, expecting to return at some time between suns to the narrower paths of honest living. In the meantime they think little and care less for the terrible wreckage they leave in their wake. Heedless girls start out to "learn something of life" and to have "a good time for awhile," with no desire for pecuniary gain, become diseased and stumble and stagger till they reach total ruin.

One day I asked a neighbor how he had relished a visitation of some eruptive disease in his family.

"Oh," he replied, "we didn't mind the disease, but I do hate that infernal quarantine."

I have heretofore opposed the reporting of venereal infections on the ground that such publicity, limited even to strictly official records, might do far more harm than good; but a tolerably mature experience has brought me to the opposite view of the situation. In the first place, such a course would be in the highest interests of the patient himself for perfectly obvious reasons. A strict quarantine against the social activities of a shameless rake would assuredly concentrate his thoughts and energies upon immediate and ceaseless efforts for restoration to health. Meanwhile society at large would be in no danger from his usual activities in the sexual line.

From local authorities little or nothing in the way of legislation is to be expected. Gonorrhea, if not amongst the respectable ailments of mankind, possesses none of the terrors of smallpox and yellow fever. In many quarters, where ignorance is densest, it is still viewed as something akin to a joke. A vestryman down with typhoid excites

deep pity on every hand! a prominent churchman afflicted with gonorrhea provokes screams of laughter from every gossip factory in the community. And this is how far we have advanced from witch burning, heretic hunting, and other exterior evidences of higher civilization!

There is, however, a means of dealing a stunning if not a decisive blow against the general and promiscuous spread of venereal diseases. The Congress of the United States has absolute and unchallenged power to regulate commerce between the States of the Union. Who questions the power of this body of lawmakers to prohibit the carrying of infectious disease beyond the borders of any State? In the interests of public health a statute prohibiting disease carriers from leaving their own States would prove a tremendous deterrent to all spreaders of venereal disease. It goes without saying that such carriers might be excluded from all interstate lines of travel, such as railways, steamers, and vehicles of all classes carrying the United States mails. It may be observed that this drastic and wholly sensible provision would be an invasion of the rights of the several States. This is not true. On the contrary, it would emphatically prevent the invasion of one State by a most unwelcome infection from another. The whole spirit of such a law would be State protection, not State subjection. Much of course might be effected by States and cities to abate if not eradicate the glaring evils of present day conditions, which all admit are full of peril to all classes of society. Certain classes of diseased persons are excluded from our ports of entry and for valid reasons that none ever questions. It is a mere matter of time before necessity shall compel our lawmakers to adopt some course of action at once sane, thoroughgoing and effective for the

prevention of the spread of venereal diseases.

In conclusion, I would again recall to the mind of the reader the burning editorial observation of *AMERICAN MEDICINE* for April, 1916, the substance of which is that our management of venereal diseases stands as a serious reflection upon our character as scientific men.

THE CLINICAL DIAGNOSIS OF APPENDICITIS.

BY

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While it is generally conceded that appendicitis is a surgical disease, it is equally true that in the majority of instances the patient is first observed by the general practitioner whose duty it becomes to perfect the clinical diagnosis. Mistakes sometimes occur, not in making the diagnosis of appendicitis, but rather failing to make a correct diagnosis, i. e., by calling something else appendicitis in the absence of such a lesion.

In the majority of cases appendicitis is catarrhal in its incipency, and the patient is usually seen by the practitioner while the disease is in that stage. Every case may eventually become suppurative, progressing from catarrhal to ulcerative and possibly to the perforative type before suppuration ensues.

If it were the general practice to examine the abdomen of every patient as a routine measure, practitioners would become better acquainted with normal appendices and be thus able to more readily detect pathology in this situation.

In the beginning of catarrhal appendicitis

there is no abdominal distension, and inspection may reveal no variation in the iliac fossæ. However, pressure over the point of McBurney elicits excruciating pain, provided the appendix be acutely inflamed. The two features of greatest diagnostic importance in appendicitis are, (a) tension of the rectus muscle, and (b) induration over the site of the appendix from beginning tumor formation. Oftentimes in incipient catarrhal appendicitis no enlargement can be detected, the patient merely complaining of more or less abdominal uneasiness and discomfort. A tumor-mass may be later appreciable in the appendiceal region which gradually disappears without the invocation of surgery. This is not invariably because of failure on part of the practitioner to call a surgeon, but because the patient refuses to submit to operative intervention. The practitioner may be surprised because the mass gradually disappears, and be inclined to doubt the correctness of his original diagnosis. While the patient improves, health is not completely regained, and he is in imminent danger from recurrent attacks. Following catarrhal inflammation, ulceration, perforation, and suppuration, are likely to ensue.

When the diagnosis of appendicitis has been made, it is the imperative duty of the internist to enlist the services of a competent surgeon, who may not only confirm the diagnosis but advise operation. It is practically agreed that every diseased appendix should be immediately extirpated; in fact, any appendix may be regarded as a menace to life, since it may cause a healthy individual to become a corpse within a few hours!

It is sometimes difficult for the practitioner to make an early diagnosis of appendicitis, and be certain that he is justifi-

fied in calling a surgeon for the purpose of immediate operation. However, after the disease has progressed to the suppurative stage the diagnosis is easy, because the clinical picture is practically unmistakable; but early in the attack, when it is of the utmost importance that the diagnosis be perfected and a surgeon called to operate while the disease is still in the catarrhal stage, considerable difficulty is likely to be encountered.

The exact location of the pus after suppuration has ensued has an important bearing upon the question of diagnosis. Oftentimes pus pockets are located in the pelvis far below the normal site of the appendix, along the psoas muscle, or at the angle of the promontory of the sacrum, sometimes being so small that their palpation is impossible. Under such circumstances the clinical symptoms and the physical condition of the patient constitute the sole guide to diagnosis.

A few words concerning treatment may be permissible: Like every other practitioner, the writer has had to treat many cases of appendicitis without the aid of surgery, because the patient and the family objected to operation, and palliative remedial measures had to be employed. In the majority of cases where the inflammation can be checked by medical treatment, suppuration can at least be arrested. By persistent application of the ice bag, the administration of opiates and perfect rest in bed, many cases of catarrhal appendicitis do not progress to the suppurative stage, and the patient may not have a recurrence for months or years. However, it is frankly admitted that where suppuration has already ensued, the proper treatment of appendicitis is immediate surgical intervention.

INFLUENZA; A STUDY OF ITS HISTORY, DIAGNOSIS AND TREATMENT.

BY

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Introduction.—Contrary to the inference which perusal of modern medical literature suggests, the malady now familiarly known as influenza is not of recent discovery; it was recognized and accurately described under various designations many centuries ago. The name influenza, however, was first used by Gagliarde in 1733, who evidently believed the disorder owed its origin to astral rather than terrestrial and atmospheric influences as was thought by the majority of more ancient medical writers.

Historical.—Inasmuch as an understandable description of influenza appears in the writings of Hippocrates and other authors of that period (460-400 B. C.) it is probable the disease has prevailed since the beginning of history. An epidemic occurred in the sixth century A. D., and others during 827 and 876. The only outbreak of the malady in the tenth century was confined to Germany and France, and the next occurred in 1311. The epidemic of 1323 prevailed throughout Italy, and in 1387 the disease raged at Montpellier and Romagne attacking nine-tenths of the population. The visitation at Paris in 1403 was so severe as to necessitate closing the assizes. The epidemic of 1410 was characterized by an extremely harassing cough; and visitations of 1414 and 1448 were peculiarly destructive to the aged.

Medical history furnishes little additional information regarding the epidemics of 1311, 1323, 1327, 1387, 1400, 1403, 1410, 1414, 1427, 1438, 1482, and 1505, but at the next visitation in 1510 the disorder was

more accurately described. This epidemic (1510), proceeding in a northwesterly direction from Malta to Sicily, Spain, Italy, France and Britain, raged all over Europe, and scarcely missed an individual. The disease was attended with violent pain over the eyes in addition to other symptoms previously noted; delirium and gastrodynia were oftentimes present; in certain instances from the seventh to the eleventh day muscular spasms and syncope occurred; diarrhea and sweating were common at the decline.

A similar epidemic prevailed in the autumn of 1557 after a hot dry summer followed by cold northerly wind. The malady was in some places preceded by ill-smelling fogs and followed by great inundations. The disease pursued a westerly course from Asia by Constantinople to Europe, and afterward visited America. The attendant fever exhibited the character of a double tertian (Mercatus). This epidemic was more destructive to life than that of 1510. Two hundred persons succumbed at Alkmaer in Holland, and two thousand in the small town of Mantua. A similar mortality attended the epidemic of 1580, nine thousand dying of the disease at Rome. The course of the affection was from east and south to west and north, raging in France after a cold dry wind following long-continued warm moist weather. The disorder appeared at Sicily in June, at Rome in July; proceeded by Venice and Constantinople to Hungary and Germany; thence to Norway, Denmark, Sweden, and Russia, where it prevailed in December. Bleeding from the nose frequently occurred during this epidemic, but the most characteristic symptoms were vigilance or somnolency, giddiness, resembling that of intoxication, and swelling of the parotid glands. Sixty thou-

sand persons died at Rome in the years of 1590 and 1591 of a similar epidemic, associated with severe cerebral symptoms.

Another visitation occurred suddenly in April, 1568, and was chiefly prevalent in England after great extremes of weather; the following summer was exceedingly hot, and a fatal epidemic of fever prevailed at its close. In 1663 sixty thousand persons were attacked in the Venetian states during one week. In 1669 a similar epidemic prevailed in Holland. In 1675 Germany was visited in September, and England in October. The disease was peculiarly fatal to women in the puerperal state (Peu). The disorder visited every part of Europe within five months, attacking fifty thousand persons at Milan, sixty thousand at Rome, and the same number at Vienna. It was very fatal in Paris and London, in the latter destroying one thousand a week in September, a greater number of deaths than had occurred in that city in so short a time since the great plague (1664). Switzerland suffered little, Italy and Spain considerably. In some places petechiæ were noted complicating the malady, and hysterical subjects complained of a peculiar feeling of cold along the course of the sagittal suture. Sanguineous discharges frequently occurred at the termination of the attack.

In the autumn of 1732 the disorder overran Europe and visited America. In Britain its course was southerly; it appeared at Edinburgh in November, and did not reach Cornwall until February of the following year. From New England (in America) it spread southward to Jamaica, Peru, and Mexico. During this epidemic the disease implicated the intestinal as well as the respiratory system; sanguineous discharges from the nose, lungs and intestine were frequent; swelling of the parotid and sali-

vary glands, and of the testes, was occasionally observed.

Several countries were visited during 1741 and 1742; and in the spring of 1743 the disease prevailed generally in Europe under the name of "la grippe," a word probably derived from *chrypka*, the Polish term for hoarseness. It commenced with lassitude and shivering, cold hands and feet, pains in the head, limbs, and spine; inflamed eyes, loss of taste and appetite. There was a remission of fever in the afternoon, and an exacerbation at night. The decline of the disorder was sometimes accompanied with diarrhea, at other times with a pustular eruption upon the skin; epistaxis was a frequent symptom. A hissing noise was observed to accompany the cough of old people, many of whom died on the ninth or eleventh day. This epidemic preceded the plague in some parts of Sicily. It was less fatal throughout England than in other countries; nevertheless a thousand died of it during one week in London.

The spring of 1762 was characterized by remarkable alternations of intense heat and cold, and by a rapid succession of wind, frost, snow and rain; and "la grippe" was general in Europe. It had appeared during the previous year in America. The disorder caused the death of one-third the inhabitants of Toulon, extending northward to Breslau, Vienna, and Hamburg, and in a month passed from London to Edinburgh. This epidemic was singularly capricious in its course and severity, destroying a hundred daily at Breslau, yet sparing Paris and the greater part of France; it was exceedingly mild in many parts of England, especially in London; but in Norwich was more fatal than the visitation of 1743.

The next general epidemic was in 1775, but this was mild in character, especially

in England. More males were afflicted than females, and the disorder was most prevalent among those exposed to the weather. It was attended with pain in the loins and sides, and occasionally with muscular cramps; there was frequently itching of the skin; in some instances a pustular eruption, in others an erysipelatous redness; in still others a rash resembling scarlatina; supuration of the parotid glands occasionally occurred; there were delirium, stupor, cough, diarrhea.

The epidemic which raged in England in 1782 was termed *bletzkarr*, from the suddenness of its invasion. In September, 1780, sailors on their way from Malacca to Canton were attacked by the malady; altho the disease had not occurred at the former place, on arriving at Canton they found it had raged there associated with bilious complaints, which attended it also in October, 1781, on the Coromandel coast and in Bengal. In November, 1781, the epidemic attacked the army besieging Negapatam; it prevailed at Astrakhan, Tobolsk, and Moscow in December; St. Petersburg in January, 1782; and Strasburg in February; spreading through Denmark and Holland (where it was designated *Morbus Russicus*) in March; it arrived in England about the end of April. In this epidemic three-fourths of the population became ill. At this time Haygarth expressed his belief that the disease was contagious.¹

The epidemic of 1803 was nearly as extensive as that of 1775. France and Holland suffered before England; in France the disorder was oftentimes followed by

ophthalmitis, and in America by dysentery; many children suffering from the disease had dilated pupils, itching about the nose and the anus, and mucous alvine evacuations containing worms. Pneumonia was a frequent complication; dimness of sight and double vision were not uncommon. After a thoro investigation Fothergill agreed with Haygarth that the malady must be contagious.

In 1830 the disease again appeared at Manila; it attacked some parts of Britain in the spring of 1831, but did not reach others until the autumn. This epidemic was widely diffused, prevailing both in the far East and in America. In Warsaw, as well as in many parts of Britain, it preceded epidemic cholera. Cough and debility continued long after other general symptoms had disappeared.

In 1833 the cholera epidemic was followed by influenza, which made its first appearance at Java, and attacked more than the visitation of 1831. It seemed more acute, but there was less cough than in former epidemics. The most prominent symptom was a severe headache, and those who died generally had cerebral manifestations at an early period.

Another serious epidemic occurred in Europe during 1836 and 1837. The malady existed simultaneously at Sydney and the Cape of Good Hope, and on the shores of the Baltic. Half the population were attacked in London, Hamburg, and Copenhagen.

The later visitations, their distribution, severity, mortality, etc., are too familiar to require specific comment. It may be interesting to observe, however, that the symptoms noted in the earlier epidemics differed in no essential respect from those of the present. The malady usually commences

¹ So far as the writer has been able to ascertain from a study of the literature, this is the first reference to the contagiousness of influenza. While the nature of the contagium was unknown to the authors of that period, the observations of Haygarth were of the utmost importance.

like a feverish attack, with chilliness and a sensation as of "cold water running down the back;" weariness and stiffness of the limbs; pains in the neck, back, and loins, more intense than those which attend common forms of fever. In severe cases there is a decided rigor alternating with heat and flushing of the skin; the fever has an exacerbation every evening, and lasts from two to fourteen days; pain is felt over the frontal sinuses and cheek-bones, or behind the sternum. The eyes are suffused; there is sneezing, tingling, and an acrid discharge from the nostrils; a short, frequent, harassing cough; a feeling of constriction of the chest and throat; not infrequently soreness, redness, and tenderness of the fauces. Expectoration, at first scanty and difficult, consisting of thick, viscid mucus, usually devoid of air-bubbles, subsequently becomes opaque, copious, and muco-purulent. Sonorous, mucous, and sibilous rhonchi may be detected by auscultation, and there is frequently partial crepitation, which is most likely to occur at the lower portion of the lungs. The circulatory system is depressed, the pulse being unusually feeble, soft, and quick in the early stages; in the decline of the disease slow and sometimes intermittent. The appetite is impaired and the taste perverted; nausea and vomiting are commonly present; the tongue white and moist, covered "with a creamy mucus, or loaded with a coating of moist yellowish fur," and presenting elevated papillæ of a peculiar vivid red color at the edges. In most instances the urine is scanty and high-colored, soon becoming thick and reddish, or assuming a whey-like appearance, and depositing considerable pink or whitish sediment. The depression of strength is extreme, occasionally resembling the collapse of cholera. The skin at first hot and dry soon perspires and

oftentimes exhales a peculiar musty odor; sometimes it assumes a bluish hue. The force of the morbid influence is in some instances directed to the intestine, producing pain, tenderness, diarrhea,—mucus or dysenteric evacuations. At other times the brain being chiefly involved, vertigo, sleeplessness, and delirium are prominent symptoms. Among the most characteristic phenomena may be mentioned the persistence of cough and debility long after cessation of other symptoms. Frequent complications are: rheumatic and neuralgic pains, inflammation of the membranes of the brain and spinal cord, pneumonia, bronchitis, phthisis, otitis, conjunctivitis, erysipelas, pleuritis, laryngitis, cutaneous eruptions, swelling of the parotid and submaxillary glands, syncope, etc. According to the older authors relapses were common, and children suffered less than adults.

Present Epidemic.—The present epidemic of influenza extends practically over the entire North American continent. It is the most severe and widely distributed since that of 1889 and 1890, which spread over the whole civilized world commencing in Asia and traveling thence westward through Europe to this country. During the last few months approximately fifty thousand cases of influenza have been observed in Louisville alone, and correspondingly greater numbers have been reported from cities with larger population. According to my observation the disease has pursued a milder course than in previous epidemics, and altho many children have been attacked, the mortality has been inconsiderable compared with the epidemic of 1889-90.

While the *bacillus influenzae* (Pfeiffer, 1892) is undoubtedly the sole etiological factor in the production of the malady, there are certain cases which based upon

the clinical manifestations are diagnosticated influenza where the bacillus has not been found. However, it is believed that in all such instances if diligent and repeated search were instituted the organism would be demonstrated present. It seems obvious that, the Pfeiffer bacillus being the sole causative factor in influenza, if this organism be not present the disease cannot be produced; yet paradoxical as it may appear, there are cases in which the bacillus is found without production of the disease. The organism in such instances is apparently in a non-aggressive state, and those individuals in whose secretions the bacilli are found might be correctly termed "healthy influenza carriers."

In this country the malady usually begins about the first of November, increases until the advent of the New Year, reaches its maximum during February and March, and then declines. Instead of the disease appearing only every seven years as was formerly believed, it has become our permanent guest, and whether occurring sporadically or in epidemic form its presence must be considered as important today as a decade or a century ago. It is a contagious malady affecting chiefly the respiratory system, but in addition presenting local and general symptomatic manifestations which vary in character and severity in different epidemics. It develops after a period of incubation varying from a few hours to a day or two, and the onset is oftentimes sudden. The afflicted individual has usually been in good physical health and is suddenly attacked with violent headache, articular pains, chills, fainting, hallucinations, etc. In many instances the attack begins with symptoms of an ordinary cold. Adults suffer more frequently than children, altho the

latter are by no means exempt; infection of the fetus in utero has been known to occur.

There are recognized two types of influenza, one mild or moderate in intensity, and the other severe. The mild form resembles an attack of bronchitis in which the general symptoms assume an unwonted severity; for several days muscular weakness and malaise are noted, intense headache of the frontal or occipital type, cramping in the limbs, chills, laryngeal catarrh, hoarseness, painful paroxysms of coughing, expectoration of a thick viscid material, chest râles, high fever at night which subsides in the morning. In many instances, however, the fever is slight, entirely disproportionate to the severity of the other manifestations. In some cases the chief symptoms are nausea and vomiting, with pain in the back and legs. The variable nature of the symptomatology in different epidemics and individuals has caused certain authors to describe the severe forms of influenza as nervous, thoracic and abdominal in character.

In certain cases the cerebral symptoms are so marked that they seem to constitute the entire disease. The headache is intense, dull, stabbing, or like the blow of a hammer, with orbital pain and a feeling of constriction about the temples; vomiting and somnolence are suggestive of meningitis. While in most instances the condition is one of pseudomeningitis, occasionally true meningitis supervenes and the patient perishes within a few days. "That the *bacillus influenzae* can cause meningitis has long been known; it has been well described by Rhea and others. The serum treatment of influenzal meningitis has been suggested by Wollstein; Flexner has produced an anti-influenzal serum which may be used in this disease; the success of such treatment has

not yet been determined." Cogoe claims there is yet no specific treatment, the therapeutic indications being those applicable to meningitis in general. The role of lumbar puncture as a therapeutic measure has been much discussed; for diagnostic purposes lumbar puncture is always indicated. In the majority of cases removal of the spinal fluid, which is under increased tension, has been followed by temporary improvement. In Langer's case lumbar puncture was followed by amelioration of symptoms, decline in temperature to normal the next day, and recovery. In Slawyk's case no improvement was noted after puncture, excepting decrease in tension at the fontanelles. Caccie's patient appeared better after puncture. In Cogoe's case three punctures were made without marked improvement which could be attributed to removal of the spinal fluid. "Even with these apparently conflicting results, lumbar puncture seems to afford at present the most rational therapeutic procedure in the treatment of the disease." (Cogoe).

Bronchial and pulmonary manifestations play an important role in the symptomatology and mortality of influenza. These include capillary bronchitis, "inflammation of the chest," broncho- and lobar pneumonia. Capillary bronchitis may rapidly become purulent; "inflammation of the chest" is oftentimes serious, especially if accompanied by blood-stained sputum and dyspnea; lobar pneumonia due to mixed infection with the pneumococcus is a dangerous complication; pleurisy is not uncommon, but seldom terminates in empyema. Abscess and gangrene of the lung may occur as a sequence of pneumonia, and pulmonary edema is common. In some cases the persistent cough may be attributed to irritative pressure upon the laryngeal nerves by swol-

len bronchial glands. While it is recognized that influenza and pneumonia are independent diseases, one seems to predispose to the other and the production of both is apparently favored by the same general causes.

In certain instances influenza assumes a severe gastro-intestinal type, characterized by nausea, vomiting, "gastric intolerance," epigastric pain, dry, red tongue; so-called biliousness, diarrhea, intestinal colic, tenesmus, epistaxis, hemoptysis, extreme prostration, the symptoms oftentimes resembling those of typhoid fever. At times the tonsils are involved in suppurative inflammation. The spleen may be enlarged, and jaundice from gastro-duodenitis or toxemia may occur. Nephritis is occasionally observed in severe types of the malady; indeed the attendant should not be surprised at any complication which may occur.

The general febrile symptoms appear to result from direct action of the bacillus or its toxins upon the corpuscular blood elements and the cerebral nerve centers, thus inducing intense pain, marked depression, and decided impairment in vital resistance. Circulatory disturbances are common; the heart action is usually weak and oftentimes irregular; paroxysmal tachycardia has been noted, and so-called influenzal angina pectoris occurs; a weak and dilated heart without anginal symptoms is by no means infrequent; endo- and pericarditis, phlebitis and thrombosis of different vessels may also be observed. The temperature varies greatly in different individuals and stages of the malady, ranging from subnormal to 106° F. Prostration is an invariable accompaniment, and the mental depression sometimes results in actual melancholia; persistent insomnia may follow an attack; acute mania is not unknown as a sequel. Neuralgic pains are nearly always present

and persistent; acute encephalitis may ensue with resulting hemiplegia following recovery; cerebral abscess is rare.

In practically all varieties of the disease the respiratory symptoms are prominent, at least in the earlier stages; later the symptomatology may vary according to the anatomical situation in which the greatest influence is exerted. Conjunctivitis is common, whereas iritis and optic neuritis are rarely observed. Suppurative otitis media frequently occurs, and in a considerable proportion of cases is followed by mastoiditis. Vertigo is sometimes persistent; herpes labialis and cutaneous manifestations are usually noted.

Diagnosis.—The diagnosis of influenza is not always easy of accomplishment. The malady may simulate typhoid fever, measles, rheumatism, broncho-pneumonia, or meningitis,—either by reason of well-marked manifestations referable to particular anatomical situations, or because of the general symptom-complex. In the majority of instances, however, the coincidental appearance of febrile symptoms, with violent pain in the head, back, limbs, various parts of the chest or abdomen, irritation of the respiratory passages and the alimentary canal, together with mental and nervous depression, etc., will be so characteristic as to render the diagnosis unmistakable. The fact that numerous individuals in the same community are attacked simultaneously, or in rapid succession, will make the diagnosis more complete. It seems hardly necessary to state that a bacteriological investigation of the bronchial or nasal secretions should be made to determine the presence or absence of the *bacillus influenzae*, and that this examination should always be made by an expert. It must be remembered that the cardinal symptom in the vast majority of

cases is excessive and disproportionate weakness.

Treatment.—Unfortunately isolation of the *bacillus influenzae* and its determination as the causative agency of the malady under consideration has not been followed by the discovery of a specific remedy, either for destruction of the organism or for certainly counteracting its effects upon the human system; consequently in the selection of remedies one must necessarily be governed by the most prominent functional disturbances which may be present in each case. It is important that elimination through the skin, kidneys and intestine be increased; congestion of the mucous membrane (especially of the respiratory passages) be reduced; severe pain and soreness of the muscular and nervous structures be relieved; and other concomitant manifestations mitigated, to insure reasonable comfort to the patient. In the attempted accomplishment of these desiderata numerous medicinal agents have been recommended. Among the most useful may be mentioned, for internal administration, appropriate doses of calomel, quinine, salol, caffeine, phenacetin, spartein, aspirin, strychnine, Dover's powder, and the salicylates in various forms. All the so-called depressing drugs must be administered with great caution, otherwise prostration may be increased. Stimulating remedies are generally useful, and of these alcohol is probably the *sine qua non*. Simple uncomplicated cases are easily handled, but complicated ones may tax the ingenuity of the attendant.

As the initial manifestation is generally a chill, anything which will cause warmth will be beneficial. Hot malted milk, hot lemonade, etc., given at frequent intervals have a tendency to lessen the chilly sensations. Hot water bags and extra bed cover-

ing may be required. Where prostration and depression are not too marked, a hot bath oftentimes relieves the internal congestion and increases the patient's comfort. Profuse perspiration, however, may result disastrously by adding to the prostration already present. Coughing and chest oppression are relieved by ammonium carbonate in doses of five to ten grains given in milk, repeated as frequently as may be required during the first two days; if this drug is not well borne strychnine may be substituted. If relief is not then obtained, small doses of codein may be given. Irritation of the throat and nose may be allayed by sprays of suitable soothing preparations. The patient should be kept in a room of equable temperature, but not too warm, and the diet should be nutritious consisting principally of liquids, broths, etc. Regardless of the type of the disease, the systemic disturbances will usually be out of proportion to the extent and severity based upon the observed clinical signs.

Where depression is marked, circulatory stimulants may be required, such as camphor, caffeine, ammonia, etc. Strychnine sulphate $\frac{1}{30}$ grain may be given hypodermatically to stimulate the nerve centers. In certain cases sulphate of spartein may be preferable to the other drugs mentioned. "One of the best stimulants, useful in the gravest of all cases which are attended with collapse and heart failure, is sadly overlooked among us, viz., Siberian musk. I know of nothing better in the most urgent of cases." (Jacobi). Copious hot enemata are also useful in threatened collapse.

In the gastro-intestinal type the pain, nausea and vomiting must be relieved. The primary indication is cleansing of the primæ viæ by the administration of calomel in small and frequently repeated doses, fol-

lowed by salines and the bismuth salts, salol, etc. If preferred castor oil may be used. Colonic irrigations may be of assistance in eliminating the toxic products; diuretics are also indicated. If gastric intolerance persists, rectal alimentation is urgently demanded to conserve vital resistance. Fortunately coprostasis is infrequently encountered as a symptom of influenza; on the contrary, diarrhea is usually noted. This in the majority of cases may be regarded as salutary, and requires no treatment. Where urinary deficiency exists, as sometimes happens in severe cases, continuous enteroclysis with bicarbonate of soda and glucose or sugar solution is indicated.

The most distressing cases are those included in the nervous or so-called neuromuscular group, and the treatment of this type is usually most unsatisfactory. While the pain may be intense, the administration of coal-tar products is contra-indicated for reasons which are obvious. Any of the derivatives of opium should be used with extreme caution. In the majority of cases a comparative degree of relief may be obtained from the use of phenacetin, quinine sulphate, and sodium salicylate. Gelsemium given to the physiological limit has been successful in some instances. Where the muscular pains are limited to the lumbar region, external applications may enhance the patient's comfort. "For this purpose the best is a mixture of equal parts of kaolin and glycerine to which ten per cent. of boric acid has been added and a sufficient quantity of any volatile oil to make an agreeable odor, applied as a cataplasm in sufficient thickness and kept hot."

It is important that especial attention be directed toward personal hygiene, sanitation and ventilation, as the nasal and buccal secretions are laden with germs, thus mak-

ing possible not only reinfection of the individual, but infection of those with whom he is associated. It is essential that the patient be practically isolated during the attack to prevent dissemination of the disease from coughing or sneezing, and he should not use the same towels, napkins, eating utensils, etc., as other members of the household. It has been stated by some observers that the disease has oftentimes been transmitted from one individual to another by osculation, therefore it would appear the height of wisdom that this practice be interdicted.

To consider the minutiae in connection with the treatment of the various complications of influenza would unduly prolong this paper, and that portion of the subject will be postponed until a more convenient time. Let it be repeated that there is no specific treatment of influenza, and "after a personal experience with the disease the average physician is apt to remember it as an avalanche of outer darkness, overwhelming the physical energies, paralyzing the mind, and plunging the spirit into an abyss of misery. . . . Influenza presents probably a greater variety of symptoms and manifestations than any other known disease; on the other hand, it appears as a transient cold in the head, while in its graver forms it may 'strike down' its victim with the utmost rapidity, or so completely prostrate his mental and physical powers as to invite insanity and even suicide."

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PROSTATIC HYPERTROPHY: WITH A REPORT OF 400 PROS- TATECTOMIES.

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The fatal outcome of this operation to one of the great generals of France—Galliéni—seems to me to make the moment opportune, to study the results of this operation, in a modified form, in the hands of one of the great French surgeons, my friend and colleague, Professor Pauchet, as outlined in his recently published statistics of 400 operations with a mortality of only 5%.

The majority of surgeons have adopted the operation of Freyer, despite the fact that the technique does not recommend itself by its elegance, that the convalescence is often tardy, and that the mortality is somewhat higher than intervention by the perineal route. But the functional results are so good, and the resumption of normal micturition so constant, that the patient, as well as the operator, soon forgets the risks and the slowness of the cicatrization.

Without doubt it is possible to shorten the convalescence by the partial, or complete closure of the bladder. It is also possible to render the operation more elegant and more anatomical by opening the bladder largely and dissecting out the adenoma in full view; but these theoretical improvements are all too often realized at the cost of a prognosis, sensibly increased in gravity.

Pauchet avers that after repeated excursions into the various fields of promised improvement, he finds no encouragement to alter the technique adopted by Freyer, but he has arrived at the reduction of mortality

to 5%, by reducing this technique to a fixed method, which is hereinafter detailed. and by operating on the doubtful cases, which admit of the procedure, in two stages. Therefore, despite his statement above, the consideration of his *modus-operandi* cannot but be considered as differing noticeably from the methods adopted by Freyer.

aration of the patient, modified technique, and watchful care following the operation.

The fatal results of operating can be classed as uremia, infection, pulmonary edema, pelvian cellulitis, infection of the prostatic cavity, phlebitis, embolism.

The pulmonary edema may follow a bad general condition of the patient, infection,

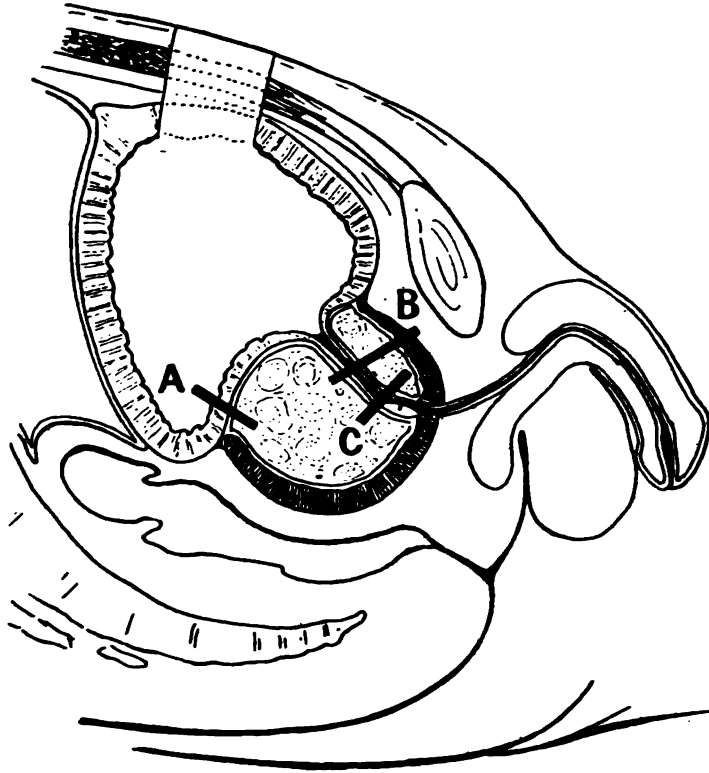


FIG. 1. The three black lines indicate the points where the mucous membrane should be separated. The right index finger (see Fig. 6) pushed into the canal as far as the verumontanum at C bursts the membrane by division. A B indicate the limits of the circle endovesical shown by the dotted line in Fig. 3. The black dots in Fig. 3 correspond to A in Fig. 1, and the white dots in Fig. 3 correspond to B in Fig. 1.

In his report of 400 cases, the statistics of Dr. Pauchet improve year by year. His first 100 show a mortality of 10%, his second 8.1%; his third 6.5%; and the fourth 4%; and the last represent a worse class of cases than the first.

He attributes his improved results to three elements: scrupulous care in the prep-

aration, or general anesthesia: in brief death is caused either by infection or intoxication due to renal insufficiency, or narcosis, and he directs his practice to anticipating and safeguarding against these complications.

He pays particular attention to the impression derived from his first view of the

patient. If he is a thin, wiry subject, with an aspect of resistant force, he does not hesitate to operate at once. But on the contrary, if his impressions are unfavorable, he proceeds by two separate, distinct

appears within a half hour, intense, and persists for two or three days. With a retarded appearance, feeble in color, continuing a long period, the condition is not favorable and the operation should be made in "two-time," if at all.

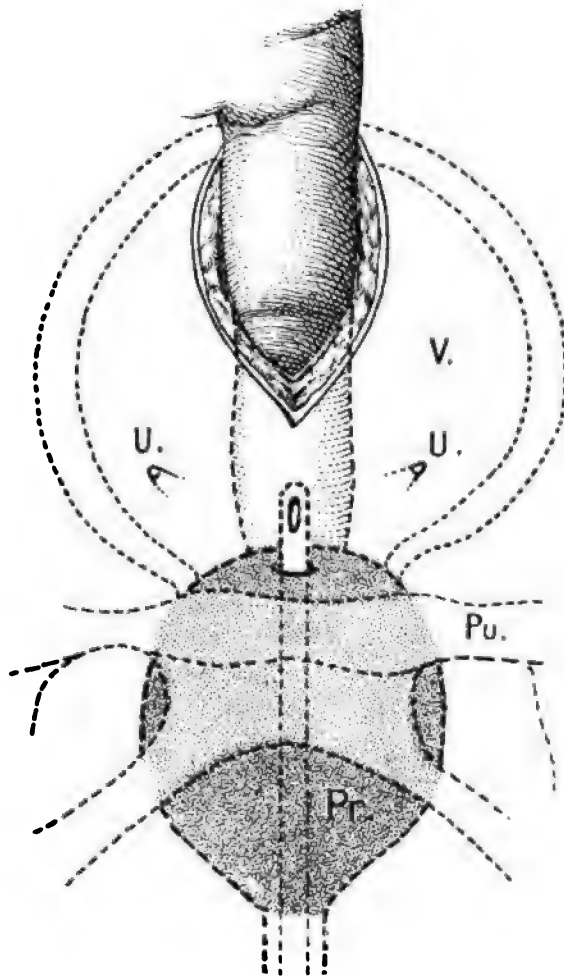


FIG. 2. This schematic figure shows how the right index finger attacks the posterior aspect of the prostate thru the endovesical opening a few centimetres behind the end of the sound. (See Fig. 4).

V. Bladder.
U. U. Ureters.

Pr. Prostate.
Pu. Pubic arcade.

operations, or what he calls "two-time."

The Determination of Renal Activity.—

Pauchet's first care is to determine the permeability of the kidney, and for this he employs the Ambard test and methylene blue. The conditions are favorable when the blue

As to the Ambard test (relation of the urea to the blood and urine) it is perfect at 0.065 and one may operate even when the report is 0.165 to 0.200, if the general impression of the patient is favorable. If there is cause for doubt, the operation should be in "two-time."

The Relief of Auto-Intoxication.—

The greater part of these cases suffer from cardio-renal insufficiency. Their blood current is surcharged with toxins and urea, oftentimes their arteries are sinuous and the tension elevated. They show signs of dyspnea after any effort; frequently there

Very often it is necessary to practice a cystostomy, and do the prostatectomy after the patient is detoxicated.

The Treatment of These Cases.—(a)

Cause the patient to drink abundantly, before breakfast and upon retiring, adding to the water, bicarbonate of soda, or sub-

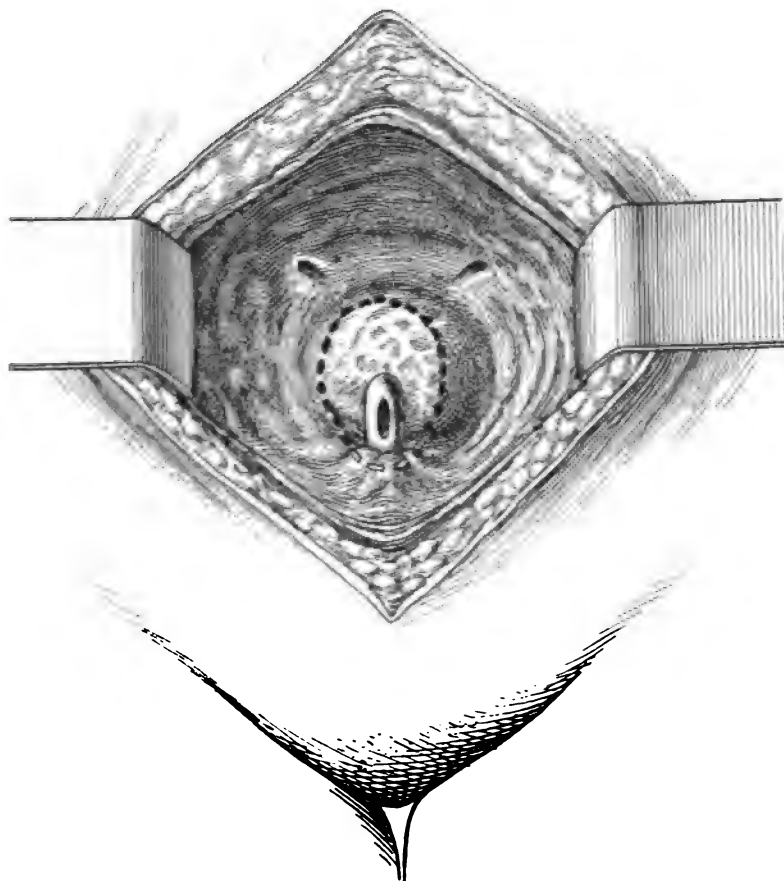


FIG. 3. The dotted line indicates the opening made in the base of the bladder and urethra above the prostate.

In front, the white dots descend into the urethra (see B Fig. 1) and not into the bladder. Behind, the walls of the bladder are sectioned around the projection made by the hypertrophied prostate.

The spreading of the walls by the retractors to show the vesical interior is simply to illustrate the figure. In actual practice this is not done.

is malleolar edema, obesity, sugar in the urine, hernia, eczema, etc.

All of these cases must be prepared with the greatest care. It is only after these detrimental factors are removed or greatly ameliorated that the patient is in a condition to be operated on.

stances promoting the elimination of the urea and uric acid.

(b) Where admissible put the patient upon an exclusive fruit and green vegetable regime; oranges, grapes, pears, peaches, bananas, plums, green figs, melons, etc., together with green vegetables. Dur-

ing the administration of this regime, interdict all albuminoids, meat, fish, eggs, milk or starchy vegetables—experience has caused Pauchet to place great confidence in the foregoing regime.

(c) Administration for an hour to one and one-half hours, a general massage of the patient, every day, to quicken the nutritive interchange and eliminate the toxins.

Following the operation, the patient is urged to practice this massage upon himself as fully as possible. It distracts his

hand, he will continue it easily after, with the result of furnishing more oxygen to the blood, exciting the tonus, facilitating the waste, and helping to avoid pulmonary complications.

Cases for Preliminary Cystostomy.—

For ten years past, Pauchet has practiced prostatectomy in a "two-time" technique in selected cases.

He first opens and drains the bladder, submitting the patient, at the same time, to the regime or treatment described, and after

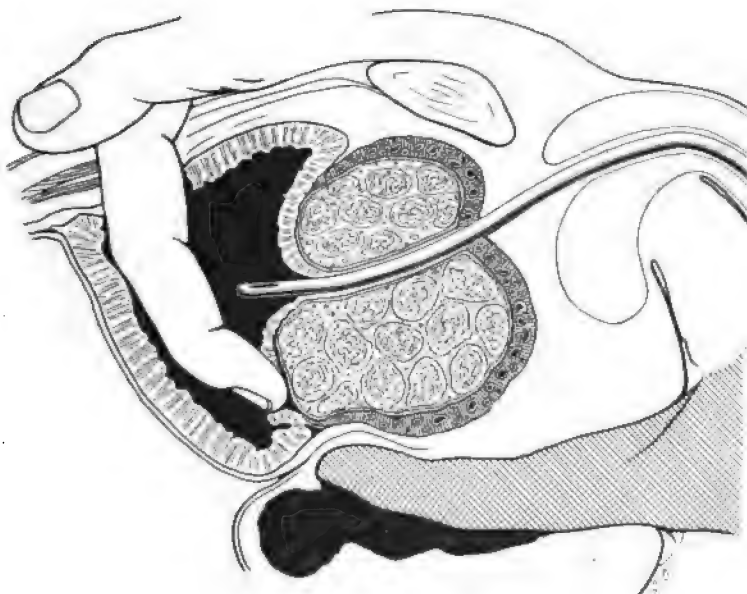


FIG. 4. The left index finger covered with a glove, is introduced into the rectum and lifts the prostate. The right index finger introduced into the bladder thru the hypogastric opening, commences the decortication—enucleation of the tumor, which is attached at the inferior—posterior endovesical point.

The point of the right index finger searches for the point of cleavage between the adenoma and walls of the cavity. It is important not to penetrate into the body of the tumor, which leaves a part behind that if not fully removed, forms the seat of later infection, supuration and secondary stenosis.

mind, raises his *morale*, exercises his muscles, increases his respiration and aids his patience.

(d) Respiratory gymnastics.

A certain number of cases tend to pulmonary congestion; to avoid this complication, teach the patient for four or five days prior to the operation to practice deep breathing thru the nose.

If he is directed to do this only after the operation, he neither understands or has the courage to try; but if taught before-

one, two, to six months after, he performs the prostatectomy, depending upon the time required to detoxicate the patient. This procedure he applies to the following cases:

(a) Where the bladder is distended, and when incontinence and polyuria are present since it is a well known fact that infection is prone to declare itself with great intensity in these cases following the first catheterization.

It is necessary to reduce the distended organ to normal size by repeated sounding,

or better still to open thru the hypogastrium and drain. This facilitates washing the bladder; drains the kidneys and allows the gaping ureters to regain a normal condition.

(b) Where pus is in the urine, we practice cystostomy to diminish the chances of infection.

Where the prostatectomy is performed in the presence of this condition, one not only risks the infection of the prostatic cavity, but also that of Retzius.

ate, lithium, or certain eliminative preparations, which are much favored in France, the surcharged blood current is purified and the danger of uremic poisoning is largely avoided.

(d) When the patient has suffered a false opening into the bladder, by reason of a brutal, or faulty introduction of a catheter, to relieve acute retention, it is possible to place a soft catheter in *demur* by the aid of a mandrin, but there is always danger of infection when this catheter is changed. Under these circumstances, Dr. Pauchet



FIG. 5. Where the nail of the right index finger is too short to enable the operator to employ it in the detachment of the tumor, or where the mucous membrane is resistant (which is rare) he can employ one arm of a pair of long curved scissors as shown above.

By performing the operation in "two-stages" the chances of infection are infinitely reduced.

(c) In the presence of renal disease, by first opening into the bladder, washing, and draining this organ systematically during some weeks or months, the return to a stronger and healthier condition is favored, especially if at the same time the patient is put upon the fruit, vegetable and water regime, hereinbefore described.

By the administration of soda bicarbon-

prefers to open into the bladder by the hypogastric route, which insures a perfect disinfection of the bladder and renders the prostatectomy at a later date more benign. This cystostomy has a tendency to relieve the congestion of the prostate, disinfects and affords repose to the ureters, and the hemorrhagic conditions attending the later operation are markedly reduced and in these special cases, oftentimes, the patient will be found in favorable condition for the operation at the end of fifteen days.

(e) A great number of these patients present cardiac insufficiency, or suffer from diabetes, obesity, hernia, or edema; all of these upon examination and general survey, leave one with a bad impression and a sense that immediate operation will be attended by risk. In practically all of these, Pauchet proceeds by a preliminary cystostomy, and submits the patient to the cure for detoxication and reduction of superfluous flesh, postponing the prostatectomy to a date some weeks or even months later. Under this course of procedure his success is almost

(b) When the prostate is enucleated, care must be exercised to see that no part of the adenoma remains and that the cavity is absolutely cleared of all debris. Otherwise here lies the greatest danger of infection. The clearing out of remnants of the operation, therefore becomes a matter of cardinal importance.

(c) The mucous membrane of the bladder and urethra must be severed as cleanly and neatly as possible, to guard against stricture of the latter. Fig. 1.

(d) Following the operation, in every

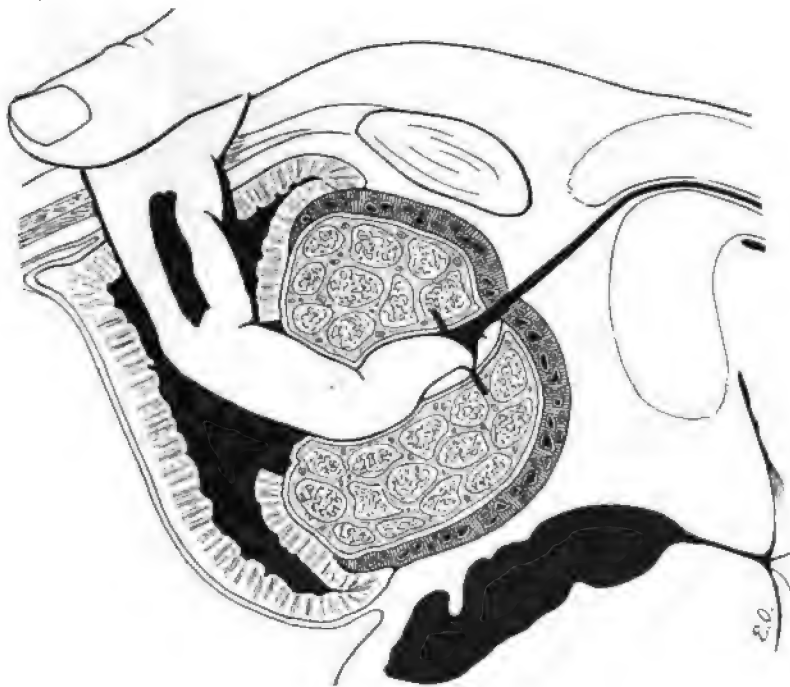


FIG. 6. The right index finger is forced into the urethra to the promontory of the verumontanum, splitting it open.

constant, whereas if the patient had been operated upon at presentation, a fatal result would have been almost certain.

Operative Technique.—As a rule those patients do the best whose operation is well done and the following are a few details that are important to this end:

(a) Do not open into or separate the bladder from the cavity of Retzius. Any violence to this region is likely to give rise to pelvic cellulitis, which is the frequent cause of a fatal result.

case where hemorrhagic oozing threatens, which is present in at least one-third of the cases, it is necessary to firmly tampon the cavity with a special long single mesh (see Figs. 9 and 10).

This tamponment is extremely painful, as a rule, for the first twenty-four hours and can only be controlled by morphine.

Dr. Pauchet remarks that this tampon is particularly favored by the day nurse, because her mind is relieved of the fear of hemorrhage, and detested by the night nurse

because the patient gives her no respite from his repeated calls for morphine.

(e) In feeble subjects, if orchitis declares itself after the operation, it saps the little remaining strength of the patient and if he is already at the limit of his resistance, this complication is sufficient to cause a fatal termination. It is therefore often ad-

pain, shock, or bad after effects common to the use of the ethylic compounds. No intoxication or evil effect results and the patient does not present the appearance of having been operated on.

(g) Rigid attention is paid to antiseptic precautions, both internal and external, those for the kidneys, bladder, and respira-

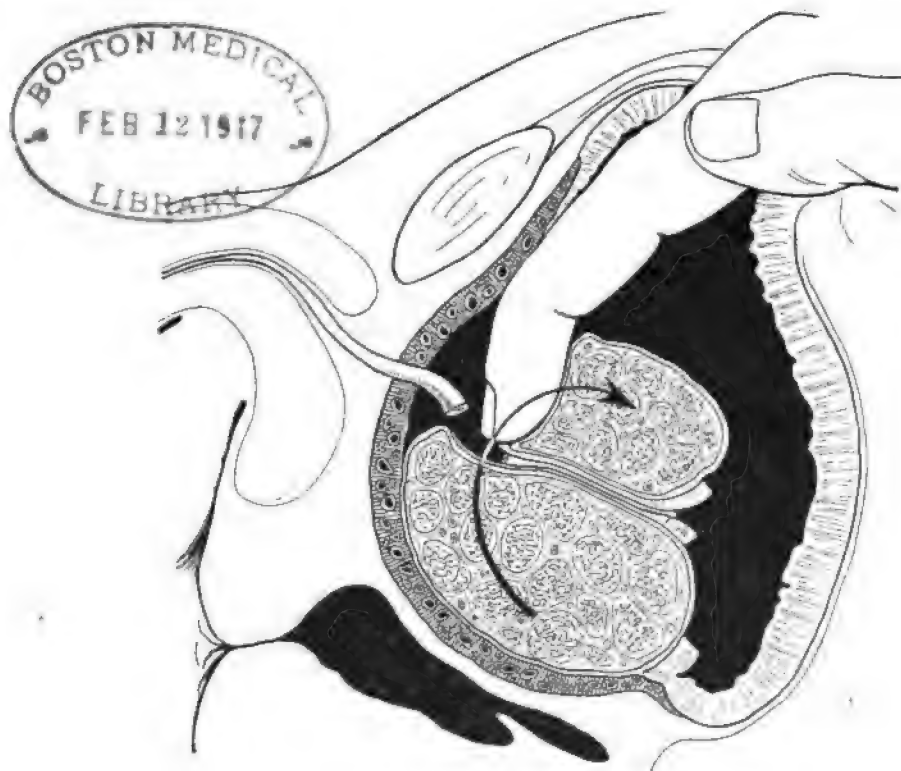


FIG. 7. Shows the right index finger hooking into the superior face of the adenoma to roll it backward.

In case the tumor is large, this manoeuvre is much easier and more certain than to attack it from below. The operator will readily understand that in case of a large tumor he must have a long finger and force it along the posterior face of the prostate to accomplish the same result. This latter method is easy where the tumor is small.

visible, in these cases, to sever the vas deferens as a precautionary measure.

(f) Pauchet has for some time confined his practice in thin subjects, to the use of trans-sacral regional anesthesia and pre-sacral in fat ones, using novocaine-adrenalin, or neocaine-surrenine Corbière. Figs. 12-13.

It makes the employment of ether or chloroform unnecessary; the anesthesia is complete of the bladder, rectum, urethra and prostate; the patient experiences no

tory tract being practiced by appropriate agents, for forty-eight hours preceding the operation.

Subsequent Care.—The care of the patient following the operation plays a part that cannot be too strongly emphasized.

The surgeon should choose a nurse upon whose experience and judgment he can rely; and if he does much of this work, he should try to employ the same nurse consecutively; method and routine play an important role in the after care.

Regional Anesthesia for Prostatectomy.

—Since the beginning of the present war, regional anesthesia has made rapid strides.

Regional anesthesia for the operation we are considering is simple and easy of application, and is illustrated by Figs. 12, 13. In Fig. 12 is shown the two methods of its application. In thin subjects the injections are made thru the five sacral foramen. In fat subjects it is often easier to reach the

midway between the anus and the coccyx, which will permit the operator to introduce the larger needles later without pain.

Thru the button thus formed introduce a needle of 9 centimetres in length, and with the point find the inferior and outer border of the sacrum at about 2 centimetres from the median line, press the needle forward with the point in constant contact with the anterior face of the sacrum, for about 1

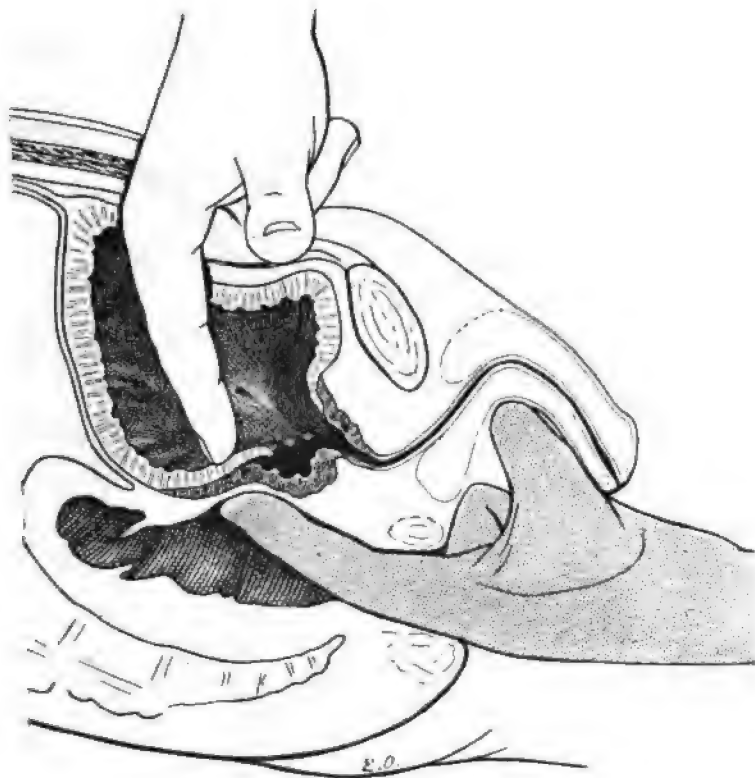


FIG. 8. Massage of the prostatic loge after the enucleation of the adenoma. This manipulation also serves to inform the operator if there is remaining debris in the cavity. If this massage does not arrest the blood flow, it will be necessary to tampon the cavity with a long mesh of gauze as shown in Figs. 9-10.

sacral nerves by entering the needle at a point between the rectum and point of the coccyx, infiltrating the concavity of the sacrum with a 1% solution of novocaine-adrenalin.

To accomplish this, place the patient in the dorsal position with the thighs flexed upon the abdomen and after properly preparing the skin by the aid of iodine and alcohol, form an intradermic button, by injecting the solution into the skin at a point

centimetre, which should bring the point to a level with the fifth sacral foramen, inject 5 cubic centimetres of 1% solution. Then continue upward parallel, at about 2 centimetres from the median line, keeping the needle point constantly in contact with the surface of the bone, at a distance of about $1\frac{1}{2}$ centimetres to 2 centimetres from the point already injected, where it should be at a level with the fourth sacral foramen; here again inject 5 cubic centimetres of the

solution; then in contact with the bone and always about 2 centimetres from the median line, proceed about $1\frac{1}{2}$ centimetres to 2 centimetres higher up to the third foramen where again 5 cubic centimetres should be injected. In the same manner a fourth time the needle is pushed upward to the second foramen, where the same amount is again

point but in place of following the surface of the bone, pierce directly upward to a depth of 9 to 10 centimetres with the finger in the rectum as a guide, to strike the upper part of the sacrum as it tilts forward. At this depth at about $2\frac{1}{2}$ centimetres from the median line, against the bone, you are at the first sacral foramen. Inject 5 cubic

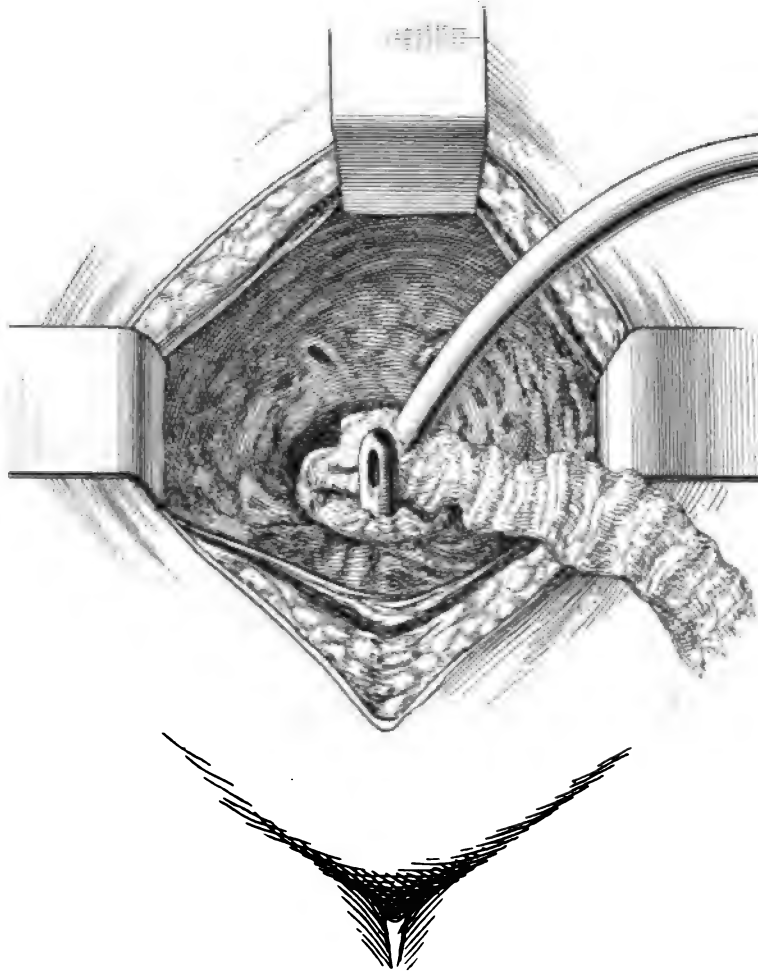


FIG. 9. Shows the tamponment of the prostatic cavity by a simple long mesh of gauze. This must be done firmly and with precision, by aid of a curved forceps. If necessary the operator may aid the operation by one finger in the rectum as a guide.

injected. Draw the needle backward to the point of beginning and repeat the same manoeuvre on the opposite side of the median line, thus comprising the two sets of nerves.

Replace the first needle by one of 12 centimetres. Place the gloved finger in the rectum, introduce the needle at the same

centimetres of solution and repeat upon the opposite side.

The last injection is an extra precaution. As a rule it is not needed, as complete anesthesia of the parts comprised in the operation is secured by injections at the second, third and fourth foramen shown in Fig. 13.

and the procedure can be mapped out with mathematical certainty.

Anesthesia Through the Sacral Foramen.—Place the patient extended, face down, upon the table, draw a line by aid of a dermatographic pencil, from the crest of one ilium to the other, A, B. The relation of the posterior superior spine of the ilium is shown at C, C, Fig. 13. Now find and mark the sacral cornua D, D. From top to bottom draw a line directly over the median line, mark a point 4 centimetres on each side from the median line on the line

Technique for the Injections.—Paint the spine with iodine and remove by aid of alcohol; with a fine needle inject five dermic buttons each side of the median line corresponding to the sacral foramen. Commence at the top with a needle of 9 centimetres in length. If it does not at once enter the foramen, the operator will readily find the opening by feeling about with the point of his needle. The needle should penetrate to a depth of about 25 mm. for the first foramen, 20 mm. for the second, 15 for the third, 10 for the fourth and 5

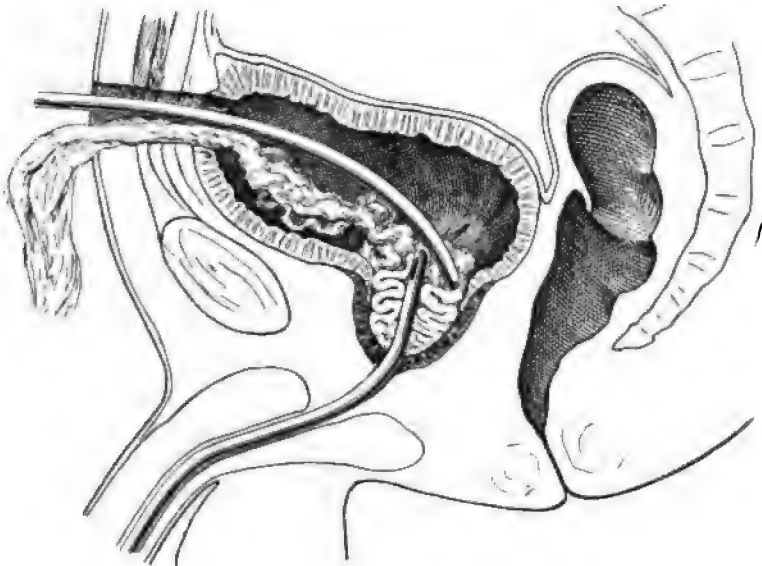


FIG. 10. The longitudinal section above shows the manner of tamponing the cavity. The forceps introduces the end of the gauze little by little and as the bottom of the cavity is covered, the operator presses against the vesical mucous membrane to carry the cut borders down into the cavity and cover these firmly with the layers of gauze. The drawing shows this manoeuvre, how the white walls of the mucous membrane are carried down into the black cavity of the prostatic loge. The long end of the gauze, with a string attached, is held on the exterior of the abdominal opening.

A, B, connect this point each side by a line drawn downward to the point D. This line passes directly over the five sacral foramen.

Commencing at the top, the first foramen is found on this line directly opposite the point of the spinous process of the fifth lumbar vertebra. Three and one-half centimetres below on the line will be found the second foramen. Two and one-half centimetres below this is the third. Two centimetres below this is the fourth and one and a half below this is the fifth. The first is about 35 mm. from the median line; the second 30, the third 25, the fourth 20 and the fifth 15 mm.

for the fifth, injecting 5 c.c. of a 1% solution at each opening.

The patient will feel a disagreeable sensation in the abdomen, or legs, as you enter each foramen and come into contact with the nerve.

After fifteen minutes you can commence your operation and the anesthesia continues for from one and one-half to two hours.

In preparation for the abdominal incision, the line of proposed incision should be infiltrated by aid of two dermic buttons, placed one at each end of the incision and injecting 20 to 25 c.c. of solution into the skin and abdominal tissues.

THE ETIOLOGY OF CERTAIN CASES OF ENURESIS, AND THEIR TREATMENT; WITH A CONTRIBUTION ON THE ACTION OF ATROPIN.

BY

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This paper is to show the origin and nature of certain cases of enuresis, and their clinical treatment; that in the cases under discussion, enuresis is a symptom, not a disease entity; and that the action of atropin in their treatment is essentially mydriatic and cycloplegic.

The term enuresis denotes the involuntary emptying of the bladder. It may occur by day or at night. Both phenomena are physiologic in early infancy, and both may persist for varying lengths of time, depending on the training, and, in some instances, on the nervous constitution of the child. The physiologic limit of the duration of the diurnal type is stated to be about ten months; of the nocturnal, two to three years. Subsequent to these periods, both, if they persist, become pathologic.

The present classification of the pathologic types, is a supposedly etiological one; viz.:

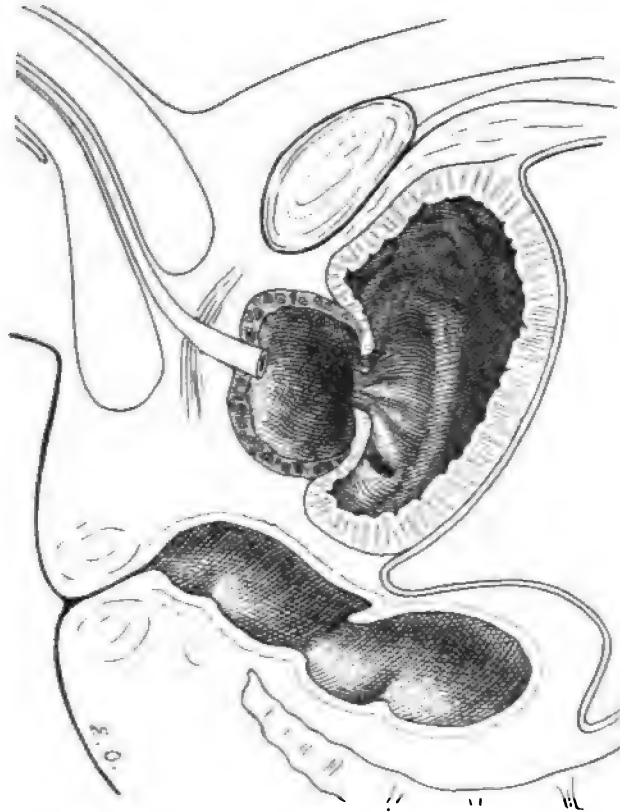


FIG. 11. Shows the prostatic cavity after the removal of the mesh of gauze. The entrance to the ruptured urethra from the vesical cavity is narrowed. The walls of the prostatic loge will retract rapidly and disappear. The vesical mucus will connect with that of the urethra and the retracted walls of the prostatic cavity will form a new prostate differing little from the normal. (See article by Dr. Dunn).

Class 1. Due to congenital anatomic defects; e. g., congenitally small bladder, spina bifida, congenitally large urethra.

Class 2. Due to reflex irritation from some discoverable peripheral source; e. g., vaginitis, adherent clitoris, phimosis, thread

Class 3. Due to "nervousness," a somewhat vague term.

This class¹ is said to comprise about 90% of all cases of enuresis, and is the bane of the clinician.

A nervous origin is ascribed to them,

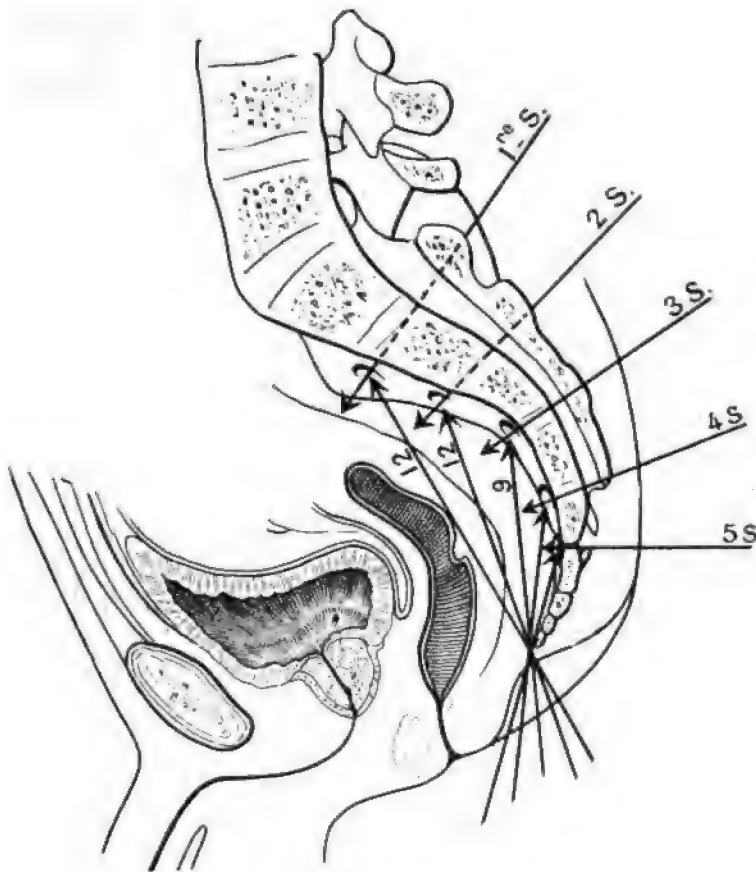


FIG. 12. *Regional Anesthesia Thru the Sacrum*.—This is the ideal form of anesthesia for the operation of prostatectomy. It renders the bladder, rectum, urethra, prostate and surrounding parts wholly insensible, making the use of chloroform, or ether, with its attendant after effects unnecessary.

The arrows show the direction of the hypodermic needle, leading to the sacral foramen where at the point of each is injected a solution of novocaine-adrenalin, or neocaine-surrenine (Corbière).

The arrows 1, 2, 3, 4, 5 passed directly thru the foramen in thin subjects and those from below are indicated for fat subjects. (See article by Dr. Dunn).

worms, constipation, calculus, cystitis, hyperacidity of the urine, diet too high in protein and sugar, too many bedclothes, sleeping on the back, diabetes insipidus and mellitus.

largely because they frequently occur in children of a supposedly nervous, instable habit. That these children should be nervous, irritable, fidgety, restless, is no cause for wonder when the true nature of the

the utmost importance. Stewart⁵ sustains this view, e. g., "when these higher cortical centers are hyperexcitable, whether from disease or emotion we may have precipitancy of micturition, or even enuresis, a condition in which the brain and spinal cord, on the slightest provocation, send impulses which relax the compressor urethrae muscle."

Is it not reasonable, in consideration of the foregoing data, to question whether some, if not the larger part of the unexplained cases of enuresis may not be due to a possible source of irritation affecting the higher micturition centers, hitherto unemphasized?

This particular aspect of the problem was suggested by observations on the clinical use of such drugs as atropin, hypnotics such as the bromides, chloral, and others, in the treatment of the "nervous" cases. Briefly, the physiologic action of atropin may be tabulated as follows: Vasodilating, mydriatic, cycloplegic, paralytic (autonomic system).

Concerning the clinical use of atropin, Kerley⁶ states that: "To insure full benefit in severe cases, the drug must be pushed until we obtain the full physiological effect, as shown by slight dilatation of the pupil."

"If the child suffers from incontinence while awake, this will first be cured."

Here is a plain statement of the fact that mydriasis and cycloplegia, produced by the atropin, relieve the enuresis by abolishing the eyestrain responsible for it.

The emphasis on the cycloplegia assumes a greater significance when it is remembered that the *cortical* center for micturition lies, for the purposes of this discussion, in the optic thalamus. It is the connecting link between the lower visual centers and the higher urinary center.

The more diverse interrelationships of the third and optic nerves, the sympathetic from the ciliary processes and the irides, *via* their association paths, are untraceable, but undoubtedly exist. The peculiarly intricate adjustments of the ocular mechanism postulate a wide intercommunication.

Why do mydriasis and cycloplegia influence enuresis? The evident answer lies in the fact that, temporarily, the accommodative apparatus is thrown out of function.

Micturition is a reflex act,² and depends, therefore, for its normal accomplishment on perfect motor and sensory coordination. Biologically considered, coordination is a developed, not an inherent quality of the human organism. Its establishment is dependent on the reception of accurate sensory stimuli, which, in turn, must elicit accurate motor response. This applies as well to the vegetative phenomena as to the voluntary. It is obvious that inadequate, ineffective and chaotic results will accrue if there is inefficiency on the part, either of the sensory or the motor mechanism involved.

The previously quoted observations of Stewart⁵ as to the production of enuresis in cortical hyperexcitability, consequently receive biological confirmation. Coordination cannot be achieved under circumstances tending to check reflex development by the spasmodic interpolation into an orderly system of cause and effect of heterogeneous impulses destructive to the ultimate rhythm of such a system.

It becomes obvious at once, that irritation from an ocular source may have a definite and predictable effect on the establishment of the urinary reflex.

Actually, there is no such thing as a pair of perfect human eyes. The variations of

their anatomic and physiologic imperfections are wide. But there is a critical point of variation. Malformation and malfunction may be tolerated up to the critical point without appreciable systemic effect on the organism as a whole, because this toleration constitutes the natural factor of safety. Beyond the critical point, no such toleration exists and systemic reactions result.

Myopia in the newborn does not exist. Its incidence increases with the age of the individual up to a certain point. Hyperopia, on the other hand, and astigmatism, are exceedingly common, more especially, low grades of these defects, unsuspected and usually undetected.

The proof of this statement lies in the action of atropin. In the premises, if atropin will relieve enuresis, it does so by the abolition (cycloplegia) of a source of irritation. This source must therefore be an error of refraction. This contention is strengthened by the clinical observation that atropin is valueless unless pushed to its full physiologic effect. In this connection, atropin instilled into the conjunctival sac, will produce the same effect as that given by mouth.

Is the physiologic action of atropin as regards enuresis other than mydriatic and cycloplegic?

As a vasodilator, does it reduce the quantity of urine secreted, in such doses as usually given? Apparently not. Granted that the vasoconstrictor paralysis of the renal vessels is appreciable, what is its influence on the secretion of urine? If the conservative opinion of Howell⁷ is to be credited: "When the arteries are dilated on account of the removal of the tonic action of the constrictor fibers,—there is observed a marked *increase* in the secretion of urine." It is probable that this explains the better

success noted in the treatment of enuresis by atropin, when the daily amount of fluid intake is decreased—the usual clinical procedure.

The influence of atropin on the secretory nerve endings of the autonomic system, need not be discussed, as, to the best knowledge of the writer, the connection between the renal secretory epithelium and the autonomic fibres has not been established.

What is the clinical significance of these deductions? 1. A certain, accurate and diagnostic test is thus furnished the clinician. Further, he is enabled to check up the work of the refractionist, because, a case that clears up with atropin provided cycloplegia has been established, but which *relapses* while correctly and constantly wearing the glasses prescribed by the oculist, *has not been correctly refracted*. 2. A simplification of the etiologic classification of enuresis.

Thus, all enuresis is due either to anatomic defects, or to reflex irritation. Of those cases due to reflex irritation, 90% about, of all cases, some if not all are traceable to errors of refraction, usually hyperopia and astigmatism.

CASE REPORTS.

Case 1. Girl, aged 9. Complaint: Nervous, night-terrors, nocturnal enuresis. Mydriatic correction:

R. E. + s. 0.75 + cyl. 5.00 ax. 100:	20
	70
	20
L. E. + s. 1.00 + cyl. 5.00 ax. 85:	—
	70

Note the asymmetry of the axes.
Relief. No recurrence.

Case 2. Girl, aged 8. Complaint: Headaches, nervousness, fidgety. Mydriatic correction: Compound hyperopic astigmatism. Relief. No recurrence.

Case 3. Boy, aged 14. Complaint:

Nasal catarrh, enuresis. Mydriatic correction: Compound hyperopic astigmatism. Relief. No recurrence.

Case 4. Girl, aged 6. Complaint: Nervousness, night cries, nocturnal enuresis. Mydriatic correction: Compound hyperopic astigmatism. Relief. No recurrence.

Case 5. Girl, aged 10. Complaint: Nervousness, nocturnal enuresis. Mydriatic correction:

B. E. + s. 4.50 + cyl. 2.00 ax. 90

Relief. No recurrence.

Case 6. Girl, aged 7. Complaint: Enuresis for over a year, *starting soon after she began school*. No local condition to explain the trouble. Retinoscopy under mydriatic: B. E. + s. 5.00

Relief. No recurrence.

Gould,⁸ G. M., reported several cases in 1894, and Fardon⁹ one in 1909.

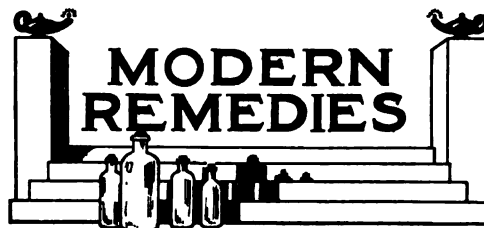
To Gould, therefore, belongs the credit of the original observation. A careful search of the *Index Catalog of the Surgeon General's Library* gave these as the only reported cases.

CONCLUSION.

Those cases of enuresis not due to anatomic defects, or other discoverable sources of peripheral irritation, are due to errors of refraction and consequent eyestrain. Their treatment consists in *accurate* correction of the error, in the *correct* prescribing of glasses, and in the wearing of these constantly and correctly.

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Conducted under the Editorial Direction of
Dr. John W. Wainwright.

Cerium Oxalate.—Reynold W. Wilcox, in the *New York Medical Journal*. (October 28th, 1916) writes that with our present knowledge of the nonabsorption of this, one of the rare earths, we can safely eliminate from our classification of diseases, those of which the effects of the remedy are remote. Basing our treatment upon clinical experience, the use of cerium oxalate is limited to conditions from which we expect results from local applications. Certain forms of nausea and vomitings will remain to annoy us, but careful observation will convince us that our failure to secure desired results with this agent is the too small quantity given. Cerium oxalate, says Wilcox, resembles bismuth subnitrate in its therapeutic action, with the advantage over the latter, however, that it does not give rise to the unpleasant odor to the breath as does bismuth subnitrate, and that it does not usually contain arsenic. The therapeutic uses of these two remedies are similar: local effect. Success demands that the dose should be sufficiently large to obtain desirable results, ten (10) grains every four hours. This dose may be exceeded with safety; thirty grains having been given with good results, skilled clinicians have proven that cerium oxalate when used in proper doses and with discretion will bring about typical and satisfactory results; its value cannot be disputed.

Coley's Mixed Toxins in the Treatment of Sarcoma.—Barss, (*Journal Michigan State Medical Society*, October, 1916) describes the treatment of four cases of osteosarcomata with Coley's toxins successfully. One patient had an inoperable sarcoma of the antrum which had been treated unsuccessfully by expert x-ray of over

twenty months. Another, with sarcoma of the head of the humerus, clinically inoperable is apparently cured at the end of a year. In the third case, the growth was delayed, health improved and subsequent operation well borne. In the fourth case, the patient is in good health more than a year subsequent to beginning treatment, with no evidence of metastasis, altho there is at the present writing, evidence of a local recurrence. The great improvement in general health of the last patient mentioned will increase the chances for a more favorable and permanent result if a second operation shall be later indicated.

Lime Deficiency in Diabetes.—Kahn (*Archives of Internal Medicine*, August, 1916), reports a clinical study of the effect of calcium on glycosuria and glycemia in six cases of diabetes. The patients were kept on a standard diet for a period of three days during which the urine and blood were examined for glucose. On the same regimen the patient was afterwards intravenously injected with varying amounts of an eighth molecular solution of calcium chloride in normal salt. The glycosuria and glycemia were then determined. In a number of cases, it was attempted to produce the calcium effect by the administration of calcium lactate or chloride by mouth, but the results were not so striking. The writer finds that calcium when given intravenously causes marked fall in the glycosuria and a gradual decline in glycemia of diabetes. Acetone, diacetic acid and B-oxybutyric acid did not develop in any of the cases. The quantity of urine diminished and the symptoms were relieved.

Carrel's Antiseptic Solution.—In the *Buffalo Medical Journal*, November, 1916, appears an article on the Application of New War Time Antiseptics to the Surgery of Civil Life, by C. W. Hemington, in which it is stated that the following modification of Dr. Carrel's solution is more generally used than Dakin's fluid as an antiseptic dressing for the treatment of infected wounds among those wounded in the battles of the present European war; dissolve 200

grams of chlorinated lime in five liters of water, agitate thoroly and set aside over night in a twelve liter jar. Dissolve 100 grams of dry sodium carbonate, and 80 grams of sodium bicarbonate in five liters of water. Pour the two together and agitate vigorously one minute. In half an hour the clear liquid is siphoned and filtered thru paper. Then test with phthalein powder to insure that it is not alkaline. Remarkable results have been secured in military surgery by the use of this solution and it seems therefore, advisable to apply it in similar surgical conditions met with in civil practice.

Bismuth Subnitrate in Acute Gonorrhea.—Howard, (*Urologic and Cutaneous Review*, November, 1916), makes a comparison between the urethra and a sinus, and declares that bismuth subnitrate is applied to the urethra in the same manner as to a sinus. The urethra is put at rest by the restriction of fluids in order to obviate the passing of urine to more than three times daily, before retiring, on arising in the morning and at the time of the physician's visit. Injections are made as follows: One dram of bismuth subnitrate is added to one ounce of sterilized water, well shaken and a syringe filled, the contents of which are injected into the urethra which is held upright for about two minutes. At the end of this time, the water escapes, while the bismuth settles in the deeper parts. This is repeated morning and at night by the patient and supplemented by a 5 per cent. collargol solution which is injected by the physician about noon.

Pane's Serum in Treatment of Meningitis.—Walter Broadbent, (*British Medical Journal*, October 28, 1916), declares that pneumococcal meningitis is still believed to be almost invariably fatal, but he reports several cases from personal experience in which recovery took place following the use of Pane's Serum. One case was that of a child between three and four years of age, who recovered under use of 0.2 gram of hexamethylenamine every four hours and Pane's pneumococcus

serum by mouth, on an empty stomach. The serum was given in doses of 5 mls daily for the first three days, then on alternate days, and finally twice a week. Improvement began after the third day, slow but steady, and recovery was complete within three months. Two other recoveries in children were secured from oral administration of the serum given always on fasting. One adult case also recovered after giving 1.3 gram of hexamethylenamine every four hours and 10 mls of Pane's serum subcutaneously every other day for four doses and every third day for three more doses.

Anesthesia and Immunity. — Wayne Babcock in the *New York Medical Journal*, December 9, 1916, under the title Surgical Immunity, gives the warning that "it is not what we put into the tissues, but what we get out of them that determines recovery from disease." He also gives the following timely warning: The traumatism of a local anesthetic, or the general toxemia of inhalation anesthesia, may seriously reduce the patient's immunity. An infection involving the root of a second or third molar treated by the usual simple dental methods, may resolve without serious symptoms. Extraction under nitrous oxide may be followed by a sharp attack of osteomyelitis of the jaw. If at the height of this osteomyelitis the patient is deeply etherized, the tissues are freely incised. The maxilla is thoroly scraped, curetted, or gouged; the patient may be lucky if he escapes with his life. At the acme of an acute surgical infection operation intervention must be carried out with great care, and it is often a source of great danger.

Pituitary Extracts in Obstetrics. — McNeile, (*American Journal of Obstetrics*, September, 1916) writes that many cases are being recorded in which the following complications have followed the use of this agent; postpartum utero-atony, fetal asphyxia, maternal collapse, eclamptic convulsions, tetanus of the uterus, premature placental separation, and rupture of the uterus. In his own experience uterine

tetanus has followed as small a quantity as five minims of the extract in two instances. There is a greater tendency to such tetanus in primiparae than in multiparae and in many instances restoration of normal contractions did not follow, a low forceps operation becoming necessary. Fetal asphyxia was also noted in many primiparae, tho it was never fatal, postpartum atony, with alarming hemorrhage in instances of prolonged labor, and in multiparae in which several pregnancies had occurred in rapid succession. Such reports and experiences lead McNeile to assert that pituitrin has absolutely no place in normal obstetrics. He gives the following conditions that should govern its use:—Complete dilation and obliteration; ruptured membranes; longitudinal presentation; cephalic presentation where there is no deflection of the head; the agent should be used only in vertex and breech presentations; when there is no disposition between presenting part and pelvis, previous knowledge of the internal pelvic measurements, pelvic contour and outlet measurements being essential; the presenting part should be completely engaged, i. e.—the greatest diameters of the presenting part must have passed below the pelvic inlet.

Magnesium Sulphate as an Anesthetic. —Peck and Meltzer, (*Journal American Medical Association*, October 14, 1916), report three cases in which surgical operations were performed under exclusive magnesium sulphate anesthesia. It was injected slowly and almost continuously into the cubital vein, in six and ten per cent. solutions; the latter strength seemed too concentrated as it caused temporary failure of respiration for ten minutes, during which artificial respiration maintained life. The injections were made at the rate of from 8 to 15 c.c. per minute; the latter rate being doubled at times for short intervals. In all of the cases complete anesthesia was secured and maintained during the whole length of the operation; while in all of the cases recovery was prompt and without untoward symptoms. In addition to anesthesia, there was satisfactory muscular relaxation. It had no bad effects, while if by chance an overdose were to be given, it could at once be antagonized by giving calcium chloride.



The Uses of Corpus Luteum.—Royston discusses extract of corpus luteum in detail (*Interstate Med. Jour.*, Dec., 1916) and gives the following as the result of his experience. "Nausea and vomiting of pregnancy were greatly improved, altho one case which might have shown the same improvement under the treatment received the addition of corpus luteum.

Sexual anesthesia is a decided indication for the administration of corpus luteum. The result is more easily attained in patients who had previously enjoyed intercourse. While this effect had not been constantly present, notwithstanding regular and persistent dosage, the irregular presence of this feature is highly encouraging. One patient volunteered the information (after the eighth injection) that she had enjoyed coitus for the first time after three years of married life. Another patient volunteered the information that she was sexually normal for the first time, altho her anemia showed only a slight improvement. When last seen she was still 'feeling fine'; sexual relations perfect.

The effect in these cases justifies the assumption that sexual anesthesia, so extremely common ($33\frac{1}{3}$ per cent. of the women in Vienna, according to Oscar Frankl) will often respond to the long continued and persistent administration of corpus luteum.

Replying to those advocates of the male being the etiological factor in *absentia libidinis* in the female, one can only emphasize the fact that the sexual proclivities of every husband cannot be made those of a specialist in his chosen field; hence, some simpler and more practical means must be adopted rather than advising a change in the male partner.

In Royston's opinion, further knowledge

of the internal secretory gland will solve this problem.

Sterility, in the presence of apparently normal female genitalia and living motile spermatozoa, is an indication, especially when the patient has periods of amenorrhea.

Amenorrhea and oligomenorrhea are distinct indications altho underlying constitutional disturbances, as obesity, tuberculosis, anemia, etc., should receive appropriate treatment.

Dysmenorrhea, having a hypersensitive nervous system as a basic factor in most cases, is improved through the effect of corpus luteum in reducing this hypersensitive state. Theoretically, membranous dysmenorrhea should be an indication par excellence, because of its action in better sensitizing the endometrium.

Menorrhagia and metrorrhagia due to disturbances of the internal secretory system are relieved when the proper arrangement is brought about.

Metrorrhagia alone may be benefited, thus suggesting a double function in the regulation of the menstrual flow. The most striking results were obtained in the treatment of menopause symptoms; best shown in cases of artificial (post-operative) menopause. All nervous symptoms show marked improvement, usually beginning after the third injection. No improvement or relief indicates insufficient dosage.

Patients with very marked symptoms can receive 1 to 2 c.cm. doses intravenously every other day without untoward effects, with quicker reaction to the substance. The effect upon patients thoroly treated disappears after two to six weeks (usually four to five weeks) without treatment, altho they can be continued on 1 c.cm. doses at longer intervals (as every seven to ten

days; in some cases 1 c.cm. every two weeks).

Patients, who find it difficult to come twice per week for treatment, can receive 2 c.cm. doses once per week, in which event the intravenous injection is recommended.

The administration of corpus luteum may be intravenous, intramuscular or subcutaneous, the rapidity of effect seemingly being in the order named.

The effects of the substances are of varying duration. Menstrual disturbances are apparently permanently relieved, whereas artificial menopause patients seemingly require it indefinitely."

The Adrenal Glands in Pneumonia.—

Pneumonia is well known to be more than a pneumococcic infection with severe toxemia, it is a circulatory disturbance and as such the study of the influences calculated to modify the circulation and the use of remedies which control the work of the heart and blood vessels, are likely to produce more satisfactory results than the present day treatment alone.

If one estimates the blood pressure in a dozen or a hundred cases of pneumonia no matter whether well-advanced or in the "threatened pneumonia" stage, as a rule it will be 100 mm. or less—more than often, less. The blood pressure is reduced. The heart is working over time and its rate is excessive, a pulse of 120 or more is usual. The temperature is high.

There is no case of pneumonia in which the function of the adrenal system is not deranged. It is impossible for the sudden and extreme toxemia not unduly to stimulate these important glands, with an eventual hypoadrenia. This adrenal depletion is more serious than the preceding hyperadrenia, for when there is an excessive liberation of adrenin it is quickly oxidized and practically the only symptoms of the temporary adrenal excess are sympathetic irritability, cardiac excitability and a dry mouth and throat.

The hypoadrenia is both the precursor and the cause of circulatory weakness, collapse and death; and it begins to manifest itself much earlier than one has been accustomed to think. The adrenals are overburdened in the earliest stages of pneumonia—

even before it is clinically possible to make an absolute diagnosis of this disease.

Obviously the essence of good practice in the treatment of this protean disease is to attempt to forestall complications, and adrenal insufficiency is *the* complication which is most common, most serious and most often overlooked and ignored. To prevent adrenal depletion is not the easiest matter but, at least, it is indeed a step in advance to realize that there is such a thing, and to watch the pulse and arterial tension with vigilance.

We now know what sort of conditions are likely to stimulate the adrenal glands, thanks chiefly to Cannon and Crile. These factors are pain, toxemia and severe emotional strain. Pain can be temporarily controlled by drugs, toxemia by elimination and good hygiene, and every effect must be bent toward favoring the mental state and attitude of the patient.

The administration of adrenalin is of extreme value late in the disease, when the asthenia is extreme and collapse is impending; but, generally speaking, it is not the best remedy to use early because of its fleeting effect and, too, because it is an extremely active drug and its use under such circumstances is easily overdone.

Organotherapeutic Principles in Gynecological Practice.—

In a recent paper Rabinovitz of New York (*Amer. Jour. Obstetrics*, August, 1916) makes some remarks which embody several principles which are essential to the effective consideration of the relation of the endocrine glands to gynecology and particularly to the use of organotherapy in this phase of medicine.

He first emphasizes the fact that many of the changes in the physiology and biochemistry of the glands of internal secretion are so subtle that they often escape detection by our present methods of diagnosis. It is first necessary to rule out all organic conditions, for just as much harm can be done by submitting organic cases to therapy suitable for functional cases as, for instance, by applying surgery to a functional disorder.

It does not suffice to learn that a given endocrine gland is at fault; but it is ab-

solutely necessary to be informed as to their interrelations in normal and abnormal states.

Because of the multiple relationships between these glands, a functional disorder, in its final analysis, is never uniglandular but always pluriglandular; tho obviously when one gland is more decidedly affected than the others, the predominating symptoms characteristic of disorder of that gland are those which are most in evidence. The appreciation of the reactions of the endocrine glands upon one another is essential to a proper consideration of functional gynecological problems and the ideal in organo-therapy will be reached only when it is possible properly to diagnose these complexes, and suitable measures can be taken to offset their influence.

It is quite evident that pluriglandular therapy is destined to supersede the administration of single gland extracts, at least so far as gynecology is concerned; and this position is in harmony with that frequently taken in this department.

Sex Hormones as Cell Stimulants.—

Lydston has demonstrated in a recent issue of the *Journal A. M. A.* (May 13, 1916) that the sex glands exert a remarkable tonic effect upon cell physiology. This is, of course, in harmony with the epoch-making findings of Brown-Séquard in the seventies of the last century. But Lydston has done much to establish on a more scientific plane the value of gonad transplantation and also the therapeutic use of extracts of the sex glands in atonic, asthenic conditions where the clinical findings indicate that these glands are below par.

In his paper he states that emulsions of these glands are available sources of material for hormone therapy; and that the essential sex hormone is a powerful physiological cell stimulant and nutrient. It is here recommended for the treatment of early stages of arteriosclerosis, nutritional diseases and certain functional neuroses.

Hawley (*Ellingwood's Therapist*, Dec., 1916) remarks that Hall has still further enlarged our knowledge of this phase of organo-therapy. There is a synergistic action between the chemical action of the gonads and others of the hormone-pro-

ducing mechanisms. Notably is this true of the lymphatic glands and the combination is said to be more efficacious than the gonad extracts alone.

"The greatest work of these lymph-orchitic emulsions is not in what they have done or may do in practice; but in what they will develop in an advanced specialized hormone therapy. We have shown the feasibility of preparing sterile emulsions of these organs and also their rare remedial value in a few chronic diseases."

Unfortunately the profession has not yet recovered from the "knock" that organo-therapy received when Brown-Séquard's first personal reports of the therapeutic value of the sex emulsions was published. The element of quackery is not in the remedy itself, but in the manner in which certain unscrupulous rascals took up his studies for their own nefarious work. The use of sex gland transplantation and the administration of testicular extract is destined to be just as acceptable as ovarian and luteal therapy is already conceded to be.

The Treatment of Menorrhagia with Mammary Extract.—

Attention is again called to the therapeutic virtue which is apparently present in mammary extract. Von Zelinski, of Chicago, (*Amer. Jour. Clin. Med.*, November, 1916) reports favorable results following this method of treatment of preclimacteric uterine hemorrhage.

One of the cases was an unmarried woman of 32 with a well defined case of dys-ovarism with no indication whatever of any organic change or neoplasm. The patient flowed two or three weeks at a time with intervals varying in length from two to three weeks. After approved methods of treatment had been tried and had failed—including curettage and the use of styptics—mammary extract was given in five-grain doses three times a day for two periods of two weeks each. The hemorrhage was relieved "in a most satisfactory manner" and further experience confirms this author's faith in this somewhat neglected phase of organo-therapy.

According to Von Zelinski mammary extract "is one of our best remedies for the control of functional hemorrhage due to ovarian dysfunction;" and assuredly it de-

serves a more frequent application in everyday gynecological practice.

Pituitrin in Placenta Previa.—The accepted place of pituitary preparations in obstetrical practice is in the late stages of labor when dilatation is complete and the pains have become insufficient.

Gallagher (*Surgery, Gynecology and Obstetrics*, April, 1916) recommends pituitrin in doses of one-half mil, repeated as needed, during the latter part of the first stage of labor. This is followed finally by a larger dose (of one or one and a half mils) when dilatation is complete. However this is not quite in harmony with present tendencies, which are leaning toward still smaller doses.

It must be remembered that Gallagher is not referring to normal labor, or even to delayed normal labor. The above administration of pituitrin is recommended in placenta previa where hemorrhage from the ruptured placental area is marked and conditions are serious and dangerous exsanguination is an immediate prospect.

The Use of Pituitary Extract.—Adair concludes his article (*Interstate Med. Jour.*, Dec., 1916) as follows:

1. The use of pituitary extract for inducing labor particularly in premature, mature and post-mature cases should not be abandoned.

2. It appears to be of value in bringing on labor in premature cases in some instances and is worth a trial where it is not necessary to end the pregnancy rapidly.

3. In cases with ruptured membranes it is of value in initiating uterine contractions.

4. In cases of placenta previa marginalis or lateralis, where the membranes rupture or are ruptured artificially, it is of value for starting uterine contractions and may save the necessity of intrauterine manipulations.

5. It is a help in cases where mechanical means are used to induce labor and may limit the amount of manipulation necessary.

6. In cases at term it is of value in starting labor.

7. It should be used in cases going over-time before any other method of inducing labor is resorted to, except in those cases where it is contraindicated or it is necessary to terminate the pregnancy more rapidly.

Adrenalin by Mouth.—Evidence is collected by Harrower (*New York Medical Journal*, November 4, 1916) to show that adrenalin is an effective remedy when administered by mouth. While it may be quickly destroyed *in vivo* experimentally, there are too many reports in the literature indicating that distinct therapeutic results have followed its administration in 5 minim or larger doses. Several reports already included in this department are mentioned and additional experiences quoted to establish this somewhat moot point.

Boogher (*New York Medical Journal*, July 8, 1916) personally used 15 drops of adrenalin solution in a tablespoonful of water as an effective means of relieving the excruciating pain due to an abscess in the transverse colon. This personal experience prompted Boogher to prescribe adrenalin in gall stone colic and in renal colic, in both of which cases it gave good results.

Pituitary Therapy in the Epileptic Syndrome.—Primary adolescent hypopituitarism may be responsible for the epileptic syndrome in certain cases and Joughin (*New York Medical Journal*, October 7, 1916) reports favorably on the control of a case of this character by the administration of desiccated pituitary extract.

Eight to ten grains were given daily with a marked change in the number and character of the seizures. They ceased altogether and so far as Joughin can find out never appeared during any period when the patient was taking the extract. The treatment has been intermittent and to say that the epilepsy was cured would be an overstatement; but in cases where there are evidences of hypopituitarism accompanying epilepsy there is prospect of rendering much assistance by this form of glandular feeding. "Even in these days of organotherapy, its importance as an adjuvant method of treatment can hardly be overestimated."



A Blot on Modern Civilization.—Many people have a vague knowledge of the fact that the conditions to be found in most of our prisons thruout the country are open to grave criticism. This knowledge however, is so impersonal and the average individual has so little conception of the actual evils that exist that the subject of prison abuse is given little or no



definite thought by people generally. Once in a while some particular flagrant abuse on the part of a prison official will focus attention on the mismanagement of a penal institution, and a wave of indignation will sweep over a community at the resulting disclosures. This indignation rarely leads to any permanent improvement in the conditions, however, and in a short time the evils are as bad as ever. Occasionally some person will realize the shame of the situation and attempt to correct it. But the public instead of rallying to the support of the movement toward reform, all too often attack the motives back of it, and thus prevent it from accomplishing anything. The recent earnest efforts of Thomas M. Osborne furnish a case in point.

Once in a while some unfortunate supplies a human document that stirs our conscience and fills us with horror to learn of the depths of brutality to which men in official positions at this period of the world's civilization can sink.

The following from a recent issue of the *New Republic* describes conditions in the State Penitentiary in New Jersey that constitute an arraignment of every decent person in that State:

"Several years ago the Board of Health condemned the third wing as unfit to house prisoners. The oldest and most populated

section, the south hall, or fourth wing, was drained by a partly covered sewer and an open channel, from which gas oozed into every cell. The Board of Health recommended that this section be altered, but like its condemnation of the west wing, this recommendation was never carried out by the administration.

The educational plant has as many limitations as the sanitary one. There is no teacher now, and when there was one provided at \$1,200 a year, the Prison Board of Education, the late warden and most of the keepers did everything they possibly could to wreck the school. The keepers arrayed the prisoners against him, and got the convict electricians to spoil the moving picture entertainment and illustrated lectures he arranged at his own expense, which they did by short circuiting the wires and by other forms of sabotage.

In the state prison at Trenton a prisoner does not get wholesome food unless he has money to pay for it, or works in the kitchen, where he can steal it.

The natural result of bad food was much unnecessary work for the doctor. Several times during the last two years I witnessed violent outbreaks on the part of the prisoners caused by the extremely bad food served them. On four or five occasions the cries of the men protesting against the rotten food were heard by the people in the streets of Trenton.

The legislature annually makes appropriations for adequate supplies. The waste and the graft were chiefly due to the official in charge of the kitchen, who was never trained for the work, and who thought more of pleasing the dishonest contractors than of satisfying the men.

More vitiating than anything else is the way in which prisoners are indiscriminately thrown together. Criminals, whether they

are murderers, forgers, pickpockets, politicians, rapists, perverts, syphilitics, white slavers, dope fiends, are put with boys and mere novices in crime. The only segregation permitted applies to advanced cases of tuberculosis. As a result of this stupid confusion, the majority of the prisoners are either unmoral or immoral.

The perverts and degenerates were the principal cause of all the fights and rows in the prison, and more than one murder could be traced to them. In most cases they were 'rats,' and the best tools the keepers had.

I saw many instances of official brutality while I was in Trenton. Very irritating is the conduct of the mailing department of the prison. The official in charge holds the position of letter clerk, contrary to the civil service rules. Altho the rules permit a prisoner to write one letter a month and to receive one a week, he is seldom permitted this privilege. The letter clerk can destroy or refuse to mail or deliver any letters which he does not like. Frequently he entertains his fellow officials by showing them prisoners' letters. I once objected to this practice. I was told 'You're a con; you've no rights; I'll let whoever I like read the letters.'

But there are other kinds of brutality. Joseph Ferrati of Monmouth county, whose 'bit' was three to seven years, was not only chained to the cell wall, but he had an additional torture inflicted on him by being handcuffed at the same time. From solitary confinement, Ferrati was removed to lodge with two insane or semi-insane men. One night, on the culmination of an argument between Ferrati and one of his companions in the cell, they fought. When the night keeper reached Ferrati's cell, he found Ferrati standing over his dying antagonist, the pale light of the moon that trickled thru the narrow window revealing their drawn faces and naked, blood-smeared bodies, and the third occupant crouching terror-stricken in the corner.

One more preventable tragedy was added to the somber and ghastly annals of New Jersey's prison. Ferrati was tried for murder and was acquitted on the ground of insanity. Ferrati, publicly and legally declared insane, was taken back to the prison and kept there for several months before he was sent to the state insane asylum.

Perhaps the most hideously brutal instance that occurred in the history of the

prison was that of Dominick Mangani, from Union county (Elizabeth). Owing to the petty grafting on Mangani by a keeper, he was provoked frequently to violent outbursts. One day he stabbed a keeper, severely wounding him. Woe unto the convict who strikes back at a keeper. Where he formerly had only one tyrant, he now has a hundred persecuting him. And they never let up until the prisoner is removed to an insane asylum, is discharged from the prison, or is dead. Excuses don't count with the keepers.

Mangani wore a ball and chain riveted to his leg. After four years and a half the leg festered. Then some one suggested that the fetters should be taken off Mangani until his wound healed. This was done. The center keeper looked at the prisoner without his leg chain. 'Put the fetters on the good leg,' said he. For six years Mangani was kept in solitary confinement, denied speech and association with his fellow convicts and deprived of tobacco, reading matter and the meanest of prison privileges.

His wife and children were not allowed to see him. He was even prevented from going to the prison chapel to hear mass. In short, Dominick Mangani was buried alive for six years, and except for the rattle of the chains and an occasional scream or roar, his cell was a coffin. A few months ago he was sent to the state asylum—I saw him removed—and a more tragic spectacle I have never seen in all my wanderings around the world.

I could continue citing instances of grafting on the prisoners, grafting on the state, tyranny and brutality, but I believe I have given the readers of this journal material enough to make them realize the duty that is before the new governor of New Jersey."

The Menace of the Rodent.—Some few years ago when plague was prevalent in California, attention was centered on certain rodents as being the

probable factors in the transmission of the disease. It had already been demonstrated by painstaking and exhaustive investigations in India, the traditional home of this terrible malady, that the rat



was the main agent in the conveyance of infection to human beings, but during the outbreak of plague in California, it was discovered by the energetic surgeons of the Public Health Service that ground squirrels were also involved in the dissemination of the disease. The late Professor Metchnikoff during a mission to Siberia to study the plague, undertaken under the auspices of the Pasteur Institute, came to a similar conclusion with regard to ground squirrels. Varieties of squirrels and chipmunks are believed also to play an important part in transmitting Rocky Mountain spotted fever to man by means of ticks which find a favorite lodging place on the bodies of these animals.

However, the menace of the rodent rests largely, or almost entirely with the rat, and the main disease carried by the rat is the loathsome and deadly malady known as bubonic plague. Innumerable fleas find a refuge with each rat, and when a rodent is infected with the *bacillus pestis*, a certain proportion of the verminous multitude that make their home with the sick rat in turn become infected, and thus not only perpetuate the infection but if perchance they come in contact with human beings, insure the direct transmission of the disease.

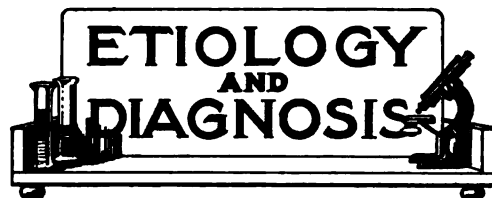
At the present time, due to conditions brought about by the war, there are numerous vessels sailing to and from New York, which provide most desirable dwelling places—from the rat's point of view. Tramp steamers of every description, some in that advanced stage of decrepitude, which especially appeals to the domestic side of the pestiferous rodent now make New York their home port. Moreover, owing to the exigencies of war, many old wooden vessels on the verge of falling to pieces from age and decay have been pressed into service, and these with their practical impossibility of disinfection provide conditions admirably suited to the rat and his filthy habits.

Needless to say the disease-carrying rodent has taken full advantage of these opportunities, and it will be no exaggeration to state that many of the ships which changed circumstances are bringing to New York, and causing them to lie in the harbor for a considerable time, are swarming with infected rats.

Some of these vessels sail from ports in which plague is endemic and altho our own

sanitary authorities are competent and constantly on guard, yet at the same time, the situation is menacing to some extent. So far as is known, the rat fulfills no useful purpose. It may be true that he consumes a certain amount of garbage and refuse, but the interests of public health will hardly countenance this method of garbage disposal. At any rate, it is clearly obvious that the best rat is the dead rat, and this fact may be especially emphasized under existing conditions. It has been suggested that it would be well to initiate against the rat a campaign of a world wide character with the slogan "*delendus est mus!*"

Every physician should recognize the increased menace and be vigilant accordingly.



The Causation of Eczema and Its Relation to Dermatitis.—Frank C. Knowles (*Jour. A. M. A.*, Jan. 13, 1917) discusses eczema in relation to dermatitis and says that almost one-third of all cases of eczema are of definite external origin. About one-sixth of all cases of this affection are caused by the occupation of the individual.

Microorganisms play only a secondary rôle in the causation of the disease.

Practically every occupation and every irritant may produce an eczema.

The portions of the skin exposed to the irritant determine the site of the outbreak.

The eruption not infrequently extends beyond the irritated areas, at times being observed on distant part of the cutaneous surface and also generally in certain instances.

The usual type of eruption noted is the vesicular or the erythematous squamous.

The eruptions mentioned as occurring in the cases in this article have lasted for weeks, months and years, and showed a marked tendency to relapse.

It is rather hard to explain the susceptibility of some persons to certain irritants, while others are not affected, excepting on the theory of a pure idiosyncrasy, an anaphylactic tendency causing sensitization of the skin.

As dermatitis and eczema of external origin have the same clinical and microscopic appearances, they should be classed under the heading of dermatitis.

The Causes of Abdominal Pain.—The causes of abdominal pain, states Jackson (*Boston Med. and Surg. Jour.*, Jan 4, 1917) may be broadly di-

vided into several different classes, which we will try to differentiate the one from the other:

1. Spasm of internal organs, of which gall-stone colic may be spoken of as the type.

2. Pain of "nervous origin," the type of which is to be found in the gastric crises of tabes; this is perhaps the most dangerous classification, as usually the diagnosis is wrong, and on the other hand, a good many diagnoses of ulcer of the stomach have been made when the pain and vomiting were only localized manifestations of spinal cord diseases.

2. Pathologic lesions of various internal organs: for instance, ulcers of various internal organs, as stomach, duodenum, etc.

4. "Referred pain." To Jackson this represents the most dangerous type of abdominal pain. Such a diagnosis is permissible, justified, yet in each individual case the burden of proof lies upon the physician, and often requires the skill of a good surgeon to confirm the diagnosis of the physician. The most common cause, in Jackson's experience, is the very acute abdominal pain which may be associated with the onset of pneumonia.

5. The last, but, of course, the most common, and certainly the most important type, because amenable to immediate and successful treatment,—inflammation of the various internal organs, which eventually leads to peritonitis, local or general.

The Diagnostic Significance of the Infant Stool.—Weston, in his comprehensive paper before the Southern Medical Association and reported in part in the *Medical Record* (Jan. 20, 1917) states that during the first few weeks of life the infant had from three to five loose golden-yellow stools daily. Gradually after this time the stools became fewer in number and of a salve-like consistency, so that at about the third month they were reduced to two or three daily. The color was due to bilirubin. The reaction was acid, due to the relative excess of fat over protein in the milk. Sometimes it might be observed that the stools were brown in color. When this was the case the milk was relatively high in proteins. The presence of small curds and a small amount of mucus in breast-fed infants' stools did not usually interfere with an infant's gain in weight and comfort and did not constitute *per se* a sufficient reason for changing the food. As to the stools of infants fed on cow's milk the appearance, reaction, frequency, and odor would depend upon the relative percentage of the fats, sugars, and proteins to each other, the kind of protein, the kind of sugar used, whether or not starch was used, and to bacterial activity. As to the color of the stools, green was the most usual abnormal color seen, and was usually due to either excessive acidity, or alkalinity changing the bilirubin to biliverdin, or to the pyocyanous. A stool changing from yellow to green had no significance. A very dark green stool was significant of disease. When the color was due to bacterial action the addition of nitric acid decolorized it. If due to biliverdin the addition of nitric acid produced a prismatic play of col-

ors. The next most common abnormal color was gray. White stools were due to the presence of undigested fat in the form of soaps. When the stools were black the color was due either to blood or some drug, probably bismuth. Sometimes a stool was seen that was grayish blue in color and was of no particular significance, being due to some change in the bile pigments. Occasionally around the edge of the stool was observed a pink strain. This often occasioned some anxiety on the part of the mother. This was caused by some change in the bile pigment and was of no significance. The odor of stools of fat indigestion had a strong odor of butyric acid or lactic acid. Protein indigestion produced an odor of putrefaction. Indigestion caused by carbohydrates gave the odor of lactic, acetic, or succinic acids.

The Etiology of Rickets.—Pritchard in summarizing his valuable contribution (*Med. Press and Circular*, Dec. 20, 1916) states that the essential feature of rickets is the bony dystrophy. This is due to the existence of an acidosis, for the neutralization of which growing cartilage is deprived of its reinforcing mineral elements. The acidosis itself may be due to many causes, but in the ultimate analysis is due to *relative overfeeding*. When more food is consumed than is required for physiological purposes, the excess must be disposed of by one or other of the many alternative methods at the disposal of the organism. Semi-combustion with the production of acid bodies of large molecular size is one of the final and most injurious of these methods. A diet otherwise adapted to the physiological needs of the organism becomes relatively excessive when any event occurs which limits the demand for food, as, for instance, when any injury throws an organ out of play or interferes with its efficiency. Injuries are inflicted on the mechanisms of the body by over stimulation or the withholding of stimuli. Thus any of the mal-hygienic factors commonly recognized as exciting or predisposing causes of rickets may exercise their harmful effect by interfering with the physiological utilization of food. Symptoms such as excessive obesity, sweating, muscular debility, nervous irritability, etc., commonly regarded as forming part of the symptom complex of the disease represent the calling into play of protective mechanisms to dispose of excess of food.

The X-Ray Diagnosis of Syphilitic Bone Lesions.—Boggs (*New York Med. Jour.* (Jan. 20, 1917) points out the great value of the X-ray in differentiating bone diseases and in discussing leptic lesions says that the roentgenographs of syphilis of the bone are usually characteristic, and changes are shown in the bone in several ways. The chief manifestations of syphilis of the bones are epiphysitis, periostitis, and gumma. There is an irregular epiphyseal line with periosteal new bone formation of the shaft side of the epiphyseal line. It may be

confounded with tuberculous epiphysitis, but gives a different picture. In tuberculosis we have rarefaction, erosion, or the typical fuzzy appearance. In syphilitic epiphysitis we sometimes have a separation of the epiphysis, but it is to be remembered that thickening of the shaft on the epiphyseal side is diagnostic in syphilis. This may be confounded with tuberculosis starting in the shaft of the bone. Probably the most common manifestation of syphilis of the bone is periostitis, which presents a typical Röntgen picture. There is a lamellation of the periosteum running parallel to the cortical line of the bone. When periosteal bone occurs there may be new endosteal bone formation producing a partial obliteration of the medullary cavity. Gumma may appear either in the form of a circumscribed periostitis causing round nodes and sometimes softening and breaking down, or may begin in the marrow or in the spongy parts of the bone. The mouse-eaten or mosslike appearance of the periosteum is very characteristic. The gummatous infection of bones, if localized, shows erosion and rarefaction of a limited area of the shaft of the bone with new periosteal bone formation on either side of the affected area.



The Vaccine Treatment of Pneumonia.—Pneumonia is now generally recognized as a pneumococcus septicemia, says Sherman in *Med. Times* (Jan., 1917), with localization of the infection in the lungs. That spontaneous recovery from this infection is due to the activities of the immunizing mechanism under the antigenic influence of the infecting organisms is quite evident and when a fatal termination takes place it is clear that the immunizing faculty did not respond adequately. So, in treating pneumonia, necessarily, the most important factor, as a means of controlling the infection consists in procuring an immunity to the pneumococcus early in the course of the disease. That the live virulent pneumococci responsible for the pneumonia are not dependable as antigens in stimulating adequate antibody formation is shown by the high mortality rate from this disease. On the other hand, killed pneumococci or bacterial vaccines, when injected into healthy tissues regularly influence tissue cells for rapid antibody production. This accounts for the striking results that are obtained from the use of bacterial vaccines in cases of pneumonia, especially when used early.

If the vaccine is given early, within three or four hours after the onset of symptoms, after the initial chill, and repeated the next day in a large majority of cases, the course of the disease

will be aborted and the patient become convalescent within four or five days. A few more inoculations should be made at somewhat longer intervals to procure a more lasting immunity.

If vaccines are employed later in the course of a pneumonia, after extensive lung consolidation has taken place, such striking results are not obtained, but from this it does not follow that bacterial vaccines are of no value in advanced cases. Clinical experience shows that even in apparently hopeless cases, vaccine inoculations frequently turn the tide in favor of the patient with a resulting recovery.

Diathermia.—Heinrich Wolf in the *New York Med. Jour.* (Dec. 30, 1916) discusses the indications of diathermia as follows:

"The indications for the treatment with diathermia are numerous. I have had very good results in the treatment of intermittent claudication, a condition due to occlusion of the arteries. There are two forms of this disease, the senile gangrene and thromboangitis obliterans. While in the former diathermia gives very good results in most cases, the latter is much harder to treat. In the senile gangrene we know of only one contraindication to diathermia, and that is thrombosis of the veins. This is quite plain. If we dilate the arteries increasing the blood supply without allowing the venous blood to flow on, we must face a venous stasis; the circulation will become stagnated and the result will be disastrous. In thromboangitis obliterans, we have to deal most likely with an infectious condition, which is frequently associated with phlebitis migrans. I noticed that the patients with phlebitis always became worse if the treatment was repeated two or three times a week, and I decided not to treat these cases any more with diathermia, except when the disease was confined to the arteries. I have a number of cases on my records which have improved under this treatment, but we must be careful not to expect too much. A number of these cases do not progress quickly; some of them terminate favorably without treatment, and only after a long period of time can a definite conclusion be reached.

In cases of increased blood pressure, diathermia has given excellent results. I do not wish to enter into the discussion whether lowering of the blood pressure is desirable. We can accomplish it in the prearteriosclerotic stage in cases where the etiology is unknown. I do not consider it indicated in patients with kidney disease, nor in cases where marked arteriosclerosis has developed, neither do I hold that we should be satisfied with the result accomplished.

It is necessary to regulate the diet so as to eliminate the etiological factor; but I say that it would be wrong to expose a patient to the danger of a hemiplegia only for the sake of principle. Instead of lowering it to a reasonable degree. The results are fairly permanent; at least I treated some patients years ago, and the blood pressure stayed low (relatively) for many months. I never try to lower the pressure below 160 mm. On two occasions I noticed weak

spells during the treatment. Examination showed that the blood pressure had gone down considerably. Treatment was stopped, and the strength of the current as well as the duration were diminished. I very rarely go higher than 900 milliamperes and twenty-five minutes at each treatment.

I know that in using the ordinary high frequency machine we consume considerably more current, but it seems that with the diathermia machine no higher temperature can be tolerated, and the results are better.

In the treatment of trifacial neuralgia and tic douloureux the results are very good, but not all forms react equally well. Cases which had been operated on or injected are often refractory, and so are those where pain is continuous, but patients who have the real form of tic, and the neuralgia in old people which is evidently due to arteriosclerotic changes in the vasa nervorum, respond splendidly to diathermia. It is difficult to describe the technic in detail, and I only wish to bring out the fact that the diseased nerve must be placed between the two electrodes. I have to refer my readers to my publication on this subject.

The results of this treatment in pain after fracture as well as in chronic myositis (lumbago), in tenosynovitis, and in trigger finger are surprising. In the short space at my disposal it is impossible to describe the technic in every case, but it is necessary to state that the most important point is to make a correct local diagnosis. We cannot expect results if we apply the current in the wrong place. This holds true in every method of physical therapy. Let me give an instance. In a case of lumbago, the whole muscle is very seldom involved. It is necessary to determine where the pathological process exists and to treat that spot in order to obtain the desired result. I believe that the poor results obtained by some physicians and laymen are due solely to improper diagnosis.

Lately, much has been said about sacroiliac disease. I have seen a number of these cases, and must say that there is no treatment, except fixation, which will give such good results as diathermia.

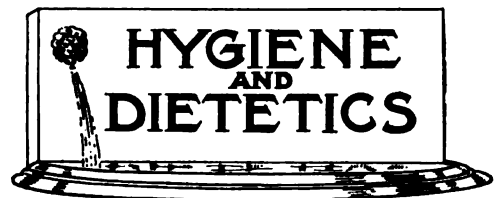
Little is known of the great value of diathermia in the treatment of certain heart diseases. I have used it in stenosis of the aorta. The pulse was typically small, the pulse wave long, the systolic pressure ninety mm. Hg. Immediately after the treatment the pulse became much better, and the blood pressure rose to 110 mm. Hg.

Naturally the electrodes had to be placed so that the aortal valves were lying between them. In another case there was a distinct change in the region of the coronary arteries as shown by the x-rays. The patient was suffering with real stenocardiac attacks. During the treatment the improvement of these subjective symptoms began, and the patient lost her pain completely for hours. The pain returned at times the next day, but I was informed that there was considerable improvement, though naturally not permanent.

A few words about the contraindications to diathermia: Of these, I know two very im-

portant ones; the acute and subacute infections, and venous thrombosis. When diathermia was first tried, physicians expected a great deal. It was known that the gonococcus was very sensitive to heat; that it stopped growing at 41° C. As we could easily increase the temperature of the tissue to any degree, at any rate to 44° C., without hurting the body materially, the possibilities were obvious. Unfortunately the results did not come up to expectation. My friend, Doctor Eitner, who was one of the first to use diathermia in gonorrhea, told me, when I saw him in Vienna, "that he had given up this method." The reason for this failure seems to be the fact that we cannot easily reach all the affected parts. Granting that we can destroy most of the microbes, the remaining ones developed quickly, as microbes do in infected pasteurized milk. There are some authors who state that by prolonging the single session to three quarters of an hour or more, their results are very good; I have had no personal experience, and shall therefore not discuss this point. What I have tried has taught me not to use diathermia in acute and subacute infections of joints. This experience has been quite general as far as the baking was concerned, and I cannot see the difference as far as the result goes.

In arthritis of long standing, especially in old people, the results are often surprisingly good. As many joints are affected at the same time, the treatment is limited in private practice, as it is necessary to treat each joint separately, which means a long session."



Diet in Obesity.—E. E. Cornwall, in the *Boston Medical and Surgical Journal*, (Oct. 26, 1916) points out that it would be an easy matter to calculate the formula for reducing the fuel value of the food intake, if oxidation in the body were always regular and uniform. In such case the amount of reduction would have a caloric value, equal to that of the quantity of body fat which it is desired to burn up. For example, if the reduction in weight desired is at the rate of two pounds a week, which means the combustion daily of about four and a half ounces of body fat, the fuel value of the daily ration would have to be reduced about 1,000 calories below the normal for size, age and activity. But the oxidation of fat in the body is not always regular and uniform, and does not always respond promptly and fully to the demands made on it by partial starvation. Extensive variation of this oxidation in different individuals is a matter of common observation; frequently small eaters are seen to remain persistently stout, while large eaters as persistently remain thin. Nevertheless, the formula sug-

gested serves as a basis on which to work out the best formula for the individual case.

Measures to improve oxidation in the body are called for in the treatment of obesity; and as all metabolic processes are more or less under control of the internal secretions, such measures are directed very properly toward improving the condition or action of the glands which produce those secretions. This means, as regards diet, regulation of the quality, as well as quantity, of the food, so as to diminish, in particular, the toxemias of alimentary origin which could injure those glands or disturb their functions. This is effected mainly by restriction or exclusion of articles of food of animal origin excepting milk and its products.

The following practical suggestions for regulating the diet in obesity seem in harmony with the facts and principles above alluded to.

Bear in mind that regulation of the diet is the principal thing in the treatment of obesity, and that this regulation should be qualitative as well as quantitative.

Insist on scales and measures being used to secure accuracy in carrying out the dietetic prescriptions.

Do not rely for protein chiefly on animal tissues and eggs, as is done in most obesity diets, but secure protein chiefly from milk and its products, which supply all the different amino acids needed by the body and are relatively easy of metabolism, being free from purins and comparatively insusceptible to putrefactive processes in the alimentary canal. If no other morbid condition is obviously present, a small amount of animal tissues or eggs may be included in the diet; but in cases complicated by obvious insufficiency of nitrogenous metabolism (as shown by gout, gravel, migraine, arteriosclerosis, chronic nephritis or hepatic insufficiency), or by disease of the alimentary canal, which increases the habitual production in that canal of putrefactive poisons and their absorption therefrom, the amount of flesh and eggs should be very small indeed or they should be excluded altogether. Such qualitative regulation of the protein ration for the special purpose of easing the burden of nitrogenous metabolism, is a cardinal principle in this method of treating obesity and its distinguishing feature.

Include plenty of fresh fruits and vegetables in the diet, in order to supply full rations of the body salts and vitamins; but use careful selection so as to include only fruits and vegetables which are comparatively free from objectionable qualities, such as indigestibility, possession of purin or oxalic acid content, and offensiveness to the patient's idiosyncrasies.

Allow water to be drunk in ordinary quantities.

Begin the treatment by restricting the fuel ration so as to supply about 1,000 calories less than the minimum health ration for the particular patient.

Do not reduce the quantity of protein much below the minimum health ration, but let the loss fall chiefly on the fat and carbohydrate.

Do not, as a rule, try to reduce the weight by more than two pounds a week, on the average. Such a moderate reduction is not often attended with any unpleasant consequences.

Foul Breath and Its Consequences.—Johnson in his interesting article in the *Jour. of the Kansas Med. Society* (Dec., 1916) says a foul breath is an indicator which directs the attention of friends and associates as well as the dentist, laryngologist, and physician, to a sign-board of disease or a breeding place of discomfort, sickness, and even death. A foul odor will cause a contortion of the facial muscles which gives the face of the recipient of the odor the expression that signifies a feeling of disgust. For this reason people with a bad breath are much handicapped in their associations with society in business or pleasure. People shun those with a foul breath, both consciously and unconsciously.

"Foulness of the breath is met with in five groups of conditions:

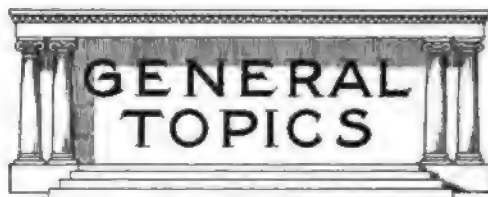
"1. Septic and putrefactive changes within the nose and mouth;

"2. Septic and putrefactive changes within the lungs;

"3. Ingestion of certain substances such as tobacco smoke, garlic, onions, spirits, whose products are excreted by the lungs and saliva;

"4. Septic and putrefactive changes in the stomach and intestines;

"5. Severe toxic condition."



NARCOTIC LEGISLATION.

The following resolutions were presented at the November meeting of the New York County Medical Society. Owing to the pressure of business their consideration was postponed until the December meeting. At this meeting they were passed and a committee is to be appointed to represent the county society when the drug laws come up before the Legislature. We hope every medical man will make his influence felt in connection with the passage of these forthcoming drug laws as their importance cannot be over-estimated.

To the Medical Society of the County of New York.

Quite a number of the members of this society are also members of the Federation of Medical Economic Leagues. Speaking in the name of these members, and in their behalf, I come before you on what we, as members of this society, consider a matter of urgent and vital importance, both in its immediate and remote consequences, to the medical profession of New York.

We ask your serious consideration of the facts which I shall present.

During the past six months the Federation of Medical Economic Leagues as a body of men having at heart the interest, reputation and

standing of the practitioner of medicine, has been forced to assume the burden of protecting and defending the medical profession, its rights, privileges and reputation in the matter of harmful, obnoxious and ill-advised attempts at narcotic legislation. This burden has not been one of our seeking. It could have been, and should have been, more fittingly handled by the County Medical Society.

In view of the menace contained in the proposed legislation itself, however, and in view of the harmful effects to the medical profession in the propaganda which accompanied its attempted passage; in view of the inactivity of the County Medical Society and its Legislative committee—and in view of the fact that prompt and vigorous action on the part of medical men was an absolute necessity to defeat its enactment into law—the Federation of Medical Economic Leagues became active in the defense and interest of the medical profession. If it had not been for the activities of the Federation of Medical Economic Leagues the anti-narcotic legislation, sponsored or supported by Mr. Charles B. Towns and Senator Boylan, would inevitably have been spread upon the statutes to the great detriment of the honest practitioner of medicine and of his patients.

With our activities in this matter has come understanding and appreciation of the extent and gravity and medical importance of the present situation. That a daily newspaper in its propaganda could print statements unfair and derogatory to our honorable profession without challenge or correction; that a layman—who owns and conducts an enterprise for the treatment of a group of diseases by a widely advertised and exploited special treatment—can receive wide recognition as a medical authority, and criticize publicly our profession individually and collectively, and can, without medical opposition or regulation or responsibility, promote and influence legislation affecting the practice of medicine; that the narcotic drug situation has assumed tremendous scope as a civic problem of state and national importance and of widespread and far reaching influence, and is primarily and fundamentally a matter demanding medical consideration, medical cooperation and medical instruction for its solution—are facts which should receive the serious thought and consideration of every right thinking physician.

The inactivity of medical men and medical bodies in the matter of the study of narcotic addiction, its investigation and education, has placed upon our profession a burden of lay and official suspicion and blame. From our work of the past six months we have learned of the extent, importance and urgency of the narcotic drug situation and have realized the imperative-ness of the demand that the medical profession shall take active part in the remedying of existing conditions.

We, members of this society, therefore present for your consideration the resolutions adopted by The Federation of Medical Economic Leagues in executive session and request that you take a definite stand upon the same.

We further request that the Medical Society of the County of New York, for the honor, reputation and welfare of medical men, make it its business to conduct an unbiased and exhaustive investigation into the facts and circumstances surrounding narcotic addiction and its treatment in New York today.

We further request that the Medical Society of the County of New York take active steps to insure adequate activity on the part of either its Legislative committee or of some special committee to be appointed by it, to represent it in the legislative halls in the protection and defense of the medical profession.

We request that the Medical Society of the County of New York assume as a part of its public health activities the education of the public in the matter of narcotic addiction.

We also request that the Medical Society of the County of New York seriously investigate the public statements and writings of those who speak as authorities on matters of narcotic treatment, and of narcotic legislation, and place itself on record as being either in support or in opposition to such persons.

The charge was publicly made by Mr. Charles B. Towns at the hearing in Albany last April *that no consideration and no cooperation could be expected from the medical societies*. It should not go unchallenged. Mr. Towns read a letter at this hearing in support of the statement that he had offered the County Medical Society opportunity to co-operate with him but without response. If the medical activities and public utterances of Mr. Charles B. Towns should, after adequate investigation, prove to be dangerous, misleading and unworthy of the recognition of the Medical Society of the County of New York, we request that the County Society hold him to strict account for the same and demand withdrawal from association with him of all members of its organization.

We believe that the unopposed activities of Mr. Charles B. Towns have been prejudicial to the reputation of honest medical men and to the advance of medical science. We also believe that such activities have only been rendered possible by the association and support of medical men of standing and reputation.

We know that the narcotic drug situation in the city, State and country is rapidly approaching a crisis in which its importance can no longer be ignored, and its handling and direction can no longer be left in the hands of non-medical men.

For the honor and reputation of the medical man and the medical profession; in the interest of public health and in the interest of the individual welfare of the sick, and for the advance of medical science, we request that the Medical Society of the County of New York take immediate steps to completely investigate and actively participate in remedying these conditions.

In making these statements and requests we are fully conscious that the narcotic situation is merely one of the general problems affecting medical men. We do not wish to be misunderstood as overestimating or exaggerating its importance. It is, however, a most important, definite and tangible present issue in the gen-

eral trend toward public derogation and discredit of the medical profession and harmful interference with its duties and rights. As such it should receive the earnest consideration of the Medical Society of the County of New York.

RESOLUTIONS.

THEREFORE BE IT RESOLVED, That the Medical Society of the County of New York immediately institute active measures for the complete investigation of the narcotic drug situation.

That the Medical Society of the County of New York provide responsible and competent representatives to appear in the name of the County Society before the Committee of Investigation provided at the last session of the New York State Legislature.

That the Medical Society of the County of New York place itself on record as to the letter to the County Society which Mr. Charles B. Towns read at the Albany hearing and which he charged had been left unanswered.

That the Medical Society of the County of New York recognize, investigate and place itself on record as regards the propaganda for immediate legislation restricting the activities of medical men, which has recently been distributed to the candidates for election to the State Legislature by the so-called New York State Anti-Drug League.

That the Medical Society of the County of New York adopt formal resolutions expressing its stand on narcotic drug legislation. We append a working model adopted by the Federation of Medical Economic Leagues.

CHRISTIAN F. J. LAASE.

President, The Federation of Medical Economic Leagues.

The Attack on the Hypophosphites.—A great many physicians will heartily agree with Mays in his criticism (*New York Med. Journal*, Dec. 23, 1916) of the Council on Pharmacy and Chemistry for condemning the hypophosphite preparations on the basis "that the therapeutic use of 'these drugs' (except possibly in some cases as a convenient means of administering the positive element in the salt, as ammonium in ammonium hypophosphite) is irrational." (See *Journal A. M. A.*, Sept. 2, 1916, p. 760). The decision of the council has been made because "there is complete or practically complete elimination of them in the urine," and, therefore, they can have "little or no effect on the body." Mays asks how is it possible, then, for the vast majority of our most active medical agents, like strychnine, morphine, etc., to influence the bodily functions, as they are all excreted in the proportion in which they are administered, so far as we know? Practically only 85 per cent. of the ingested hypophosphites is excreted and 15 per cent. remains behind. Is the 15 per cent. supposed to become inert and passive, or is the council following the fate of the ataxic who falls over his own feet? It is hardly credible that anyone but this council entertains such a thought, for it bears

the mark of improbability on its very face. Mays cites definite examples of the specific influence of these drugs when given to young rabbits experimentally. He again contends the statement of the council that the therapeutic value which the hypophosphites possess is attributable to their basic contents. Mays recalls the fact that when Churchill introduced the hypophosphites into England, more than half a century ago, he prejudiced the profession against them, and also gives such names as Darenberg, Charteris, Hodgkinson, Wilson Fox, Cotton, Denoble, and Thorowgood as paying tribute to the decided efficacy of the hypophosphites, especially the latter in his work on "Consumption and Its Treatment by the Hypophosphites." The council asserts that the hypophosphites are used "partly from the force of habit and partly because of the power of advertising." Mays considers that it is hardly comprehensible that the medical profession has really and finally sunk to this moribund extremity in its efforts to differentiate between useful and worthless weapons with which to fight disease. Must all the experiential and experimental therapeutic knowledge, accumulated thru centuries of careful medical observation, be submitted to a self-appointed censorship, the professional knowledge of which is confined to the comparative narrow limits of chemistry and pharmacy, which is presumably oblivious of all clinical experience in regard to these agents, which endeavors to introduce impossible hypotheses to account for the action of drugs, and which is, therefore, no more capable of sitting in judgment on the intricate problem that has to do with the science and art of administering medicine, than is the botanist or the biologist, who is also engaged in a calling that is closely affiliated with medicine? From the evidence presented Mays concludes that the statements launched by this council with the object of exploiting the worthlessness of the hypophosphites, makes a very sorry showing alongside the many valuable therapeutic attributes which these drugs have been known to possess.

A MODERN SOLILOQUY.

VIRGINIA FISK GREEN.

To cut or not to cut: that is the question:
Whether 'tis wiser for an o'er racked frame to suffer

The tortures of outrageous 'pendicitis,
Or to take knife against the surly monster
And by curtailing, kill it. To cut, to slash:
What more? And by that slash to put an end
To pain and wipe forever off the slate
That dreaded organ: 'tis a consummation
Devoutly to be wish'd. To cut, to slash:
To slash, perchance to death: ay, there's the rub!

For in that slash so keen may lie the power
To make us shuffle off this mortal coil.
Our too, too solid flesh might melt,
And we might fain resume existence, when
We had it not. Doctors and wielders of
The knife protect us! Till the damn'd thing lies

At rest in alcohol—and then we thank thee!

—*Pacific Pharmacist.*

American Medicine

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Medical Mobilization.—The cold shadow of war has fallen upon the nation. A chill and a shudder has brought its normal reaction of increased heat. The spirit of patriotism is aroused. Lethargy, indifference, inaction have given way to enthusiasm, application, and devoted service. A nation of many component national factors has suddenly been welded into a homogeneous mass. The expression of a truly national feeling has been manifested everywhere.

In the midst of prosperity and material success, the nation has grown careless; indolent, and wasteful. National adolescence has been characterized by bombast, temerity, and extravagance. In the presence of the frowning face of Mars there has suddenly come national realization. Action, thoughtfulness, and careful judgment are being exercised thruout the land. The ideals of civilization are threatened. The last vestiges of primitive emotion have not been thrown off. The nation, loving peace and hating war is, nevertheless, preparing to defend its honor.

Fortunately, there are those who cling to ideals with almost "impertinent" tenacity and whose belief in non-resistance and human brotherhood forces them to struggle vigorously for the avoidance of war and the maintenance of peace. The pacifists are a valuable group in the community, regardless of whether their views be accepted or not. Since our nation loves honesty, sin-

cerity of purpose, and moral courage, it must recognize that those of pacific leanings are struggling to protect the nation against impulsiveness, hysteria, and hasty action. Ideals of national honor vary. The war spirit is rampant. The peace spirit is struggling for existence. On one side is the large mass of individuals who see in war the only method for preserving national honor. On the other side, a smaller group sees in the preservation of peace the best method for maintaining national honor. In a democracy, the views of the majority prevail, whether they be right or wrong, and when the die is cast, the will of the majority is accepted as the true expression of national feeling.

In this time of crisis, sober thought must be given to the various problems of international relations. The public requires careful guidance without bombastic, jingoistic utterances, and needs patriotic inspiration free from cries for blood. War has long been surrounded with panoply, blare of trumpets, and significant ceremony. If there must be war, let it be approached with grimness and determination as an unpleasant duty to be performed. Let its seriousness in terms of human life and social sacrifice be recognized. Let the best brains and brawn of the nation be marshalled, organized, drilled and trained for the performance of the various duties necessary

for the successful determination of an early and permanent peace.

The place that the medical profession occupies in times of martial life is peculiar in that it is not essentially combative in character. Its duties are protective and restorative. Its services are valuable to friend and to foe. The military surgeon does not recognize a specific uniform as the necessary card of introduction to the military hospital. Service to humanity continues to be the motive underlying medical usefulness.

From the experience of the belligerents across the sea, the nation must have learned the value and importance of a large and thoroly trained medical branch of the service. The necessity for neutral red cross units for attending to field hospitals and base hospitals is indicative of a failure to recognize the paramount importance of officially caring for the sick and the wounded. From the standpoint of the fighter, the position of the wounded, the sick, and the psychically disabled is merely that they shall be removed as quickly as possible from the active forces, in order that their presence may not embarrass military movements or hamper the morals and discipline of the sound fighting force.

An injured soldier is no soldier. He is an incubus and a parasite sapping the vitality of the active army. It is for this reason that there must be organized a group of non-combatants, who can serve the nation by saving and restoring to useful activities as many of the injured as possible.

Regrettably, in the youthfulness of our nation we have been wasteful. Our lands are not intensively cultivated. Full crop production, as found in France or Germany, is scarcely known here. The tonnage of

food waste would feed a small nation. Our coal fields and mines do not yield their full possibilities. Among the cheapest commodities in America today is human life. There has been inestimable wastage thru accidents and diseases, incident to occupation and industry, but the carelessness, indifference, ignorance, and neglect which have allowed it are slowly passing away. In drugs and medicine, in hospital building and organization, there has been lacking the thoro systematization that can only be established thru efficiency, economy and thrift.

On the brink of conflict, it is time to pause and contemplate the constructive possibilities for true patriots. How can the medical profession best serve the nation? There should be not merely the development of new organizations, requiring new machinery, large funds, and scattered centers of interest, but the physicians of the nation, as a whole, should be organized, as far as possible thru the normal agencies now existent. The machinery of the American Medical Association and the State and County Medical Societies should be placed at the service of the Government, and thru them the entire profession should be mobilized for the civil and military duties which will be incumbent upon the profession in event of war.

If universal military training is to be regarded as essential for maintaining an efficient military force, then adequate training and organization of the medical force should be secured to raise it to a high standard of effectiveness for its particular functions.

The type of work now being performed by the American Red Cross, the establishment of units in a number of large hospitals of the country, represents a valuable

lesson in organization under private auspices, but without direct responsibility to national authority. It is timely to consider the reorganization of the Officers' Reserve Corps which provides for volunteers who may be available for active service when war is imminent. The assignment of the Reserve Officers to various duties in the United States Medical Department of the Army on the present pro rata of medical officers would be insufficient to care for the medical and surgical phases of civil and military service, in the event of a war characterized by the exigencies and furies experienced in the titanic grip of nations across the sea.

How can the medical profession best be mobilized and trained to perform its emergency duties? How can it acquaint itself with the details necessary to enable it to fulfill its obligations to the Nation? There is no more vital question confronting organized medicine today than "how may it become fully prepared to give unstinted, intelligent and patriotic service to the Government of the United States?"

Education Thru Autopsies.—The accuracy of clinical diagnosis has long been subject to sharp criticism. The studies of Cabot and Oertel suffice to create a reasonable suspicion in the minds of diagnosticians as to the capability of carefully trained physicians to interpret, adequately and properly, the objective phenomena upon which they base their diagnoses. The establishment of a correct diagnosis is necessarily the basic problem to be solved before rational treatment can be instituted or satisfactory prognosis can be established.

In our medical schools considerable, tho

still insufficient time is given to the determination of diagnostic accuracy. For centuries the anatomy of the human body has been regarded as the foundation of medicine. It was not, however, until pathological anatomy came into its own thru the efforts of Rokitansky and Virchow that speculative medicine gave way to the correlation of clinical observation and the pathological studies resultant from autopsies.

As is well pointed out by Winternitz (*Modern Hospital*, October, 1916) "The autopsy furnishes the only means of teaching the student pathological anatomy; it controls clinical diagnosis and therapy; it is the only reliable evidence on which vital statistics may be based, and it is a constant source of problems necessary for the advancement of medicine. Naturally, therefore, the greatest benefit is derived from the autopsy in an institution where teaching is combined with clinical and research facilities."

In medical colleges, gross pathology, cellular pathology and bacteriology receive a considerable time allotment. Rarely is the opportunity afforded for the correlation of the pathological facts demonstrated and the ante mortem clinical symptoms.

From the standpoint of medical pedagogy, the time spent on human dissection is probably less important than a similar period of time devoted to autopsy work. Unfortunately, text-book descriptions of disease are so general in character that the practitioner rarely sees a patient suffering with most of the symptoms he has been taught constitute the clinical picture of specific diseases.

The study of gross pathology is more likely to be correlated with microscopic anatomical pictures than with the symptoms, clinical history, or objective signs

which existed previous to securing the pathological specimen. The visualization of pathological conditions is advantageous to every clinician, practitioner, and diagnostician.

The role of the autopsy in the combat of modern diseases is of immense importance. Regrettably, a comparatively small percentage of autopsies is secured in the teaching hospitals of the United States. According to Winternitz, the percentage ratio of autopsies to deaths in 17 United States hospitals shows 14 of them to have a percentage ratio of less than 30 per cent. The figures for Germany, Austria, and England indicate that the opportunities for securing autopsies are far greater than this. Obviously there are more persevering and successful efforts made to secure necropsies.

While it is true that the autopsy is most effective in determining the true cause of death and thus possesses distinct advantages from the standpoint of vital statistics and scientific medicine, a more useful service may be secured thru the utilization of autopsies for the benefit of the education of the interne staff, post-graduate students, resident and attending physicians.

The autopsy is not to be regarded merely as a perfunctory procedure for the purpose of clearing up doubtful diagnoses, or indeed for the satisfaction of the demands of insurance companies. There should be, in connection with every autopsy, a study of the clinical history, and a careful scrutiny of the objective phenomena which had been described by internes, attending physicians, and consultants ante mortem.

The ability to perform an autopsy should be within the technical equipment of every practitioner of medicine, particularly those who practice medicine in far distant places

or isolated from the advantages of hospitals and laboratories.

The general public is still moved by sentimentality, and violation of the human form may be objected to on religious grounds. The attitude of the layman must be considered, but the progress of medicine must not be hindered by conservatism, ignorance, or sentimentality.

The education of the laity with reference to the importance of necropsies is not difficult, nor is it likely to result in failure if an intelligent effort is made by sympathetic minds to awaken them to a realization of its importance to humanity. The difference in results is well illustrated in some of the figures presented by Winternitz. In the Mayo Clinic in 1915 there were autopsies in 95 per cent. of the deaths, while there were requests for autopsies in 100 per cent. of those dying. The percentage of autopsies has increased from 81 per cent. in 1910, to 95 per cent. in 1915. The Massachusetts General Hospital, tho requesting autopsies in every case succeeded in securing only 28 per cent. of autopsies in 1915. By way of contrast, various hospitals do not know how frequently they make the request nor indeed the percentage of autopsies which they are able to secure. Some request necropsies only in a small percentage of the deaths. There is an increasing number of institutions where a high percentage of autopsies is secured, tho unfortunately there is still a large number of institutions which have a considerable number of deaths each year but show a very small percentage of necropsies.

It is patent that the dearth of autopsy study in this country is not due simply to a lack of opportunity, but it results from the failure of medical or hospital authorities

to take advantage of the opportunities when they arise. With the development of new types of teaching institutions, it is to be hoped that the pedagogical advantage of pathology correlated with symptomatology, clinical history, and physical diagnosis will not lack supporters. There are few educational demands made by undergraduates. The determination of the course of study of the medical curriculum and the methods devised for undergraduate instruction are in the hands of the faculty. Here is a new opportunity for undergraduate and postgraduate institutions to advance medical progress in diagnosis, prognosis and treatment in a scientific and practical manner that will make physicians more capable to serve their clientele.

Penalizing Health.—The adaptation of human ideals of penology in a practical form is tending to reconstruct penal institutions. Too long have insanitary prisons, harsh discipline, cruel isolation been permitted in the guise of punishment for those who have transgressed the laws. To sentence an individual to a term in an institution and deprive him of his liberty has been the purpose of those interested in the penal system. To place a man "in durand vile" so that as a result of punitive measures his resistance is broken down and he contracts disease that shortens his life is hardly consonant with modern ideals. A long prison sentence should not be tantamount to a death penalty.

The principle of penology which is gaining force is that a prisoner should be benefited by his stay in prison and those tendencies which occasioned his downfall should be overcome, if possible. Human penology

would send him forth into the world to take up his duties and responsibilities as a person reformed in his attitude towards society and willing to conduct his life in accordance with social law. The principles of parole and indeterminate sentence are not merely measures of economy, but are based upon sound psychology, and thus far have proven themselves to be satisfactory procedures in facilitating the moral and social redemption of alleged criminals not recidivists.

From the standpoint of public health, there is no defense for the failure of authorities, entrusted with the responsibility of caring for convicts, to remove conditions leading to their physical deterioration. It is obvious that for the rational care of prisoners a knowledge of their physical condition on admission is essential.

The Physical Status of Convicts on Admission to Prison.—F. L. Heacox (*New York Medical Journal*, January 13, 1917) presents the results of his medical survey of the newcomers to Auburn State Prison which serves to indicate their actual physical status at the time of their admission. While 78 per cent. could be classified as possessing good health, the catalogue of the physical defects found indicates the nature and extent of the medical and surgical treatment required to restore the prisoners to a more healthful condition.

The disabilities most common were carious teeth, constipation, indigestion, hemorrhoids, hernia, tuberculosis, and enlarged turbinates. Eighteen per cent. showed defects of the circulatory system; 33 per cent. had defects of the visual apparatus, and 10 per cent. of the aural system. Figures of this nature do not include any

illnesses or injuries that have arisen as a result of incarceration.

If to this survey were added the results of the mental testings of the new admissions, there would be a very striking proportion of individuals requiring specific care arising from their mental incapacities. Studies of this character pointing out the physical status of prisoners point conclusively to their importance as the basis of organized and systematic health supervision of prison inmates.

From the standpoint of practicality, it would be desirable to have the physical and mental examinations instituted previous to the commitment to any definite institution. In this way there could be secured the proper segregation of criminals with a view to placing them in institutions best suited to their physical needs. Separate types of organizations are necessary to deal with tuberculous criminals, or those infected with venereal diseases, or those suffering from mental incapacities demanding particular forms of special treatment.

To gather together indiscriminately convicts afflicted with alcoholism, exophthalmic goitre, aortic regurgitation, syphilitic ulcerations and tuberculosis is to place a strain upon a single prison that is bound to result in failure—in so far as health conditions are concerned.

A convict does not sacrifice his rights as a human being by virtue of his failure to live up to the law. The responsibility of the state towards one of its subjects is increased when it assumes the total responsibility for his physical, mental, and moral welfare. Under these circumstances, it is assuredly a function of the state to take every step possible to conserve the health of prison inmates and to make every advance possible with a view to restoring to health

those coming under state supervision in a subnormal condition.

Prison physicians are by no means lacking in cognizance of the importance of an individual examination for the purpose of making diagnosis and instituting treatment. They have been victims of the penal institution as much as the convicts themselves. Fortunately a large number are now thoroly aroused and are seeking to institute reforms tending to eliminate the difficulties and disadvantages under which they are working.

The medical reforms of penal institutions should originate in the medical profession. There is every reason why physicians, entrusted, thru licensure, with a special duty toward the state should constantly point out the numerous ways in which the health conditions of penal institutions may be improved. Lack of facilities should be denounced. Limited appropriations should be opposed, and there should be a constant demand for a reorganization of the methods of commitment, in the interests of the welfare of the community. Penalizing criminals with a view to improving the good name of the state is not to be condoned. If society must protect itself from criminals, it owes an equal duty to protect the convict from the derelictions of the state. The state should not be criminally negligent in caring for the negligent criminal.

A Medical Practice Act.—According to the *New York State Medical Journal*, January, 1917, a new medical practice act is to be introduced during the present session of the Legislature. Among the commendable

new matter introduced is the provision, with reference to examinations, that the "Regents may adopt a rule uniformly supplementing all such written examinations by oral, laboratory, and clinical bedside examinations." There is no doubt that the adoption of this practical suggestion will serve to indicate, with a greater degree of accuracy, the knowledge and practical capability of applicants for licensure. It is not possible for a written examination to cover the entire field of modern medicine or to expose a complete representative cross section of the information which has been absorbed by a candidate during his career as a medical student. The practical demonstration of clinical and diagnostic technic together with the exposition of opinions and ideas in answer to intelligent questioning is a most valuable adjunct in determining the degree and the nature of the acumen and ability of the medical graduate seeking to enter upon his professional life.

The provision for registry of physicians contains a valuable suggestion that there shall be an annual renewal of registration of physicians, together with an attestation that he has been duly licensed to practice medicine in the State of New York. The application for a renewal of license to practice medicine must be duly sworn to and recorded.

The purpose of this measure is to disclose—and thus in time eliminate—the illegal practitioners of medicine. There are many individuals posing as physicians who are neither properly qualified nor duly licensed. The fee of two dollars, which the annual registration carried with it, is for the purpose of establishing a fund for the prosecution of illegal practitioners, and for taking legal steps against duly licensed physicians

guilty of various offenses mentioned in the medical practice act.

There may be some question as to the building up of a large fund whose need will decrease in direct ratio with the successfulness of the act and the completeness of its enforcement. Probably, for practical purposes, and looking to the future, it would be well if this fee were reduced to one dollar.

The Desirability of Obtaining Individual Opinion.—

While the proposed medical act has the approval of the Board of Regents, and the Council of the State Society, there is reason to believe that an expression of opinion by the membership of the various county societies would be exceedingly valuable in bringing forth the advantages or disadvantages of the act as viewed by the general practitioners throughout the State. While physicians are prone to speak of their democratic organizations, the general method of conducting medical societies lacks the method of procedure which gains the full support of the individuals comprising the smallest units. The system of delegation of authority should carry with it the principle of reference back to the constituency upon vital questions concerning the immediate welfare of every licensed physician. The recent action of the New York County Medical Society in disapproving of the Act, and its implied censure of the Council of the State Society in approving it, accentuates the necessity of this form of democratic expression of opinion or conviction.

Furthermore, rallying to the support of legislative measures the beliefs, opinions, and authorizations of county societies is far more valuable for moving legislative action than is the single voice of the State Society.

As a whole, the proposed medical practice act is a distinct improvement upon the present one. The additional items introduced are of transcendent importance and involve material adjustments with reference to registration, suspension, reinstatement, and methods of prosecution. County societies might well give the subject a degree of intelligent and thoughtful attention commensurate with their interest in protecting the professional ranks from illegal practitioners, charlatans, criminals, and drug addicts.

Tonsillectomy and the Voice.—Tonsillectomy is an exceedingly popular and meritorious operation at the present time. Its general practice upon children with throat obstruction has been unqualifiedly recommended as a hygienic procedure of significance and importance.

Frequently, the question arises as to the results of tonsil removal from throats of singers. A doubt as to whether the voice itself is injured or tone production impaired has created much nervousness and hesitancy upon the part of singers actually requiring tonsillectomy for the general benefit of their health. Voorhees (*New York Medical Journal*, December 16, 1916) has sought to clear up the elements of tradition by means of a *questionnaire* sent out to a large number of physicians and singing teachers.

His conclusions indicate that bad results need not be feared at the hands of skilled operators. It is obvious that any operation should be performed by one skilled in the technic and careful in after treatment. The importance of careful and thoro operative procedure is intensified when the patient is one whose welfare and happiness depend upon conserving vocal ability.

Apparently, the general consensus of opinion appears to be that the loss of the singing voice occurs very rarely after tonsillectomy. While impairment of tone is possible, most of the cases reported show an increased range of from one-half to a full tone. These conclusions are reassuring and should serve to establish tonsillectomy as a safe procedure from the standpoint of the vocal artist.

The skilled specialist is able to avoid the faulty technic which results in injury to the pillars, the uvula, and the soft palate. On the other hand, no operation should be advised when it might be avoided. All the known factors making for a successful result must be carefully weighed because despite a harmony of opinion as to the favorability of an operation, an occasional accident is bound to occur, even at the hands of the most conscientious tonsillectomist.

To decrease the volume or impair the quality of a voice, to limit its flexibility or range, to sacrifice purity or sweetness of tone, to induce fatigue, are disadvantages to vocalists. Remote as the possibilities of these complications may be, the responsibility for tonsillectomy merits cautious consideration when the patient is a vocalist dependent for success and reputation upon his voice and tone production.

Most of these sequelae are preventable and their occurrence suggests some faulty development in the technic or surgical after treatment or the faulty voice training after the operation. Apparently, the singing teacher and the laryngologist have an opportunity for cooperation that thus far has been insufficiently developed.

While stress has been placed upon the singer's problem, it is obvious that the same necessity for the careful selection of pa-

tients, for the use of the anesthetic, and for aseptic technical methods obtain for all persons. The more commonly an operation is performed, the less seriously is it considered, and the greater is the likelihood of carelessness and indifferent technic. Every operation possesses some hazard, the responsibility for which must be accepted by the operator and by the patient.

Syphilis and Society.—Obviously it approaches the platitudinous to state that venereal diseases are a menace to society. It would be no exaggeration to assert that these diseases are the greatest source of danger to health known, and that if they could be stamped out, or even effectively controlled, the world would not only be a better place in which to live, but much suffering by the innocent would be avoided. The control of venereal disease is essentially a public health problem, and one of which a successful solution seems almost impossible. In Europe conditions have greatly increased the prevalence of these so-called society diseases, and efforts are being centered upon the determination of means whereby the "plague" may be stayed.

In America the problem is becoming quite as serious, especially since the measures taken to check the spread of syphilis and gonorrhea have not met with any conspicuous success.

With regard to the regulation of syphilis, we may well ask, why is it that the question presents so many and seemingly insurmountable difficulties? Much is known concerning the disease, probably more than is known of any other single malady. As Dr. William Allen Pusey points out in the very excellent

January number of the *American Journal of Syphilis*—a new publication of a very high order devoted to this particular disease—we are acquainted with all the essential facts which are necessary to an intelligent sanitary attack upon it. Indeed there is at our disposal the means for an overwhelmingly strong sanitary campaign against the disease. At the outset it may be conceded that if syphilis were a purely medical problem, there would be no particular necessity to provide for its effective sanitary control; inasmuch as this is not the case, it is difficult to understand why measures of known efficiency have not been more actively employed. It would appear that the necessary steps in this direction should be taken without delay. The truth of the situation really is however that syphilis is more than a sanitary problem, and it is this which has presented the chief stumbling block to the realization of success in the struggle with this disease. As a matter of fact, it is as much a social question as a sanitary one, and on account of the disease being in the main venereal in origin, concerns man in his most intimate social relations. The victim of the malady, even tho innocent, as a consequence of the invariable suspicion attached to its acquirement, spares no effort to keep his condition secret, and it is this aspect of the situation that renders any sanitary campaign waxed against it so difficult to conduct.

"Little Hope in Measures to Regulate Those Afflicted With the Disease."—

Restriction of the liberty of those infected by syphilis is impossible to carry out, for the reasons that, *first*, it is a secret disease, *second*, its period of infection is long, and, *third*, and it is of such wide prevalence. Pusey estimates that there are probably five

million individuals suffering from syphilis in the United States, ninety-nine per cent of whom have resolved at all costs to keep their condition secret. Consequently, a practically impossible barrier has been erected against the institution of measures for the restriction of the liberties of syphilitics, while methods of the nature of quarantine or isolation are out of the question.

So far as notification of syphilis is concerned, there are many sanitarians who strongly urge that a regulation of this character be enforced. There is neither time nor space to enter into a discussion of a matter so controversial, but it seems to be the opinion of perhaps the majority of those who have closely studied the subject, that notification has been weighed in the balance and found wanting.

Pusey holds, moreover, that a regulation of this kind might prove a great obstacle to a thoroughgoing therapeutic attack upon the disease, which attack probably affords the best prospects of achieving definite results in many cases. The regulation of prostitution, restriction of marriage, and the punishment of those syphilitics who knowingly infect innocent persons, may be dismissed in a few words, as not adapted to cope adequately with the exigencies of the situation.

Educating the Public Regarding Syphilis.—The education of the community so that its members may have a more or less satisfactory conception of the nature of syphilis and especially with respect to its risks and the methods of its prevention, is a valuable and almost essential part of a sanitary campaign. For long, the mention of venereal disease in society was tabooed. The Anglo-Saxon race appears to have a strain of prudishness in its composition, its enemies term it hypocrisy, and this charac-

teristic, if such a term is applicable, was never more strikingly shown than in the reluctance to discuss diseases of a venereal origin in public, or even in the family circle. Fortunately, this false modesty is being slowly but surely dispelled; indeed within the past year or so, there has been some danger of the pendulum swinging too far in the opposite direction—that is—of flaunting the matter so vividly and constantly before the people, that an exaggerated and abnormal fear of syphilis will spring up. “A little knowledge is a dangerous thing” and the dictum may be applied, to some extent, to what is known by the man in the street regarding syphilis; he has heard so much and so often about the awful sequelae of syphilis that he often becomes morbid and almost hysterical on the possibility of infection. It is extremely difficult unquestionably to reach a happy medium, and set forth a temperate, common sense and yet scientific presentation of the menace of syphilis. It is especially difficult also to instruct the young with discretion and efficacy on this subject—to say enough and not too much.

In the main, however, the education of the public with respect to venereal diseases has been improving, and in course of time the consistent work that has been done by many of our health boards is bound to exercise a potent influence in checking their spread. The movement in the direction of temperance is also certain to go far in decreasing the prevalence of these diseases, for there is no doubt that alcohol is one of the most potent factors in their origin and dissemination. On the whole, it may be said that the outlook as to the fight against syphilis is brighter than ever before, but in order to win a decisive victory, the campaign must be prosecuted with the utmost vigor, and above all be guided by intelligence.



Insufficient Incomes.—In determining the fields of municipal activity in behalf of public health, educational measures have played an important part. In the monthly bulletin of the Department of Health of the City of New York, November, 1916, among the conclusions presented, as the result of the studies made of an illness-census, appears this striking paragraph.

"Our study of the mortality of the city by sanitary areas has supplied us with ample proof, if such proof, indeed, were needed, that the family income is a most important factor in raising or lowering morbidity and mortality. Where the family income is sufficient to permit living under reasonably favorable conditions (sanitary housing, ample food, adequate clothing, wholesome recreation), sufficient to permit of proper nursing of the ill, morbidity and mortality are invariable lower; whereas, when conditions are reversed and poverty, with its train of social complications exists, morbidity and mortality are high, no matter how favorable the age and sex constitution or other similar factor of the population may be."

Recognizing the inherent truth that morbidity and mortality during most of the age groups under 45 are in inverse proportion to the family income, one naturally asks what is to be the attitude of health departments toward this fact. Here is no question of education of mothers, or of isolation, quarantine, fumigation or of school inspection or district nursing, or control of midwives, or supervision of nurseries, or baby farms. It is time for health departments to consider what is to be their official attitude towards social conditions which they recognize and acknowledge to be important factors in raising morbidity and mortality rates. Campaigns against alcohol

and overcrowded street cars are already recognized as within the jurisdiction of the health department. The regulation of milk supplies, the examination and supervision of food handlers, the sanitary control over public eating places are accepted as legitimate health department functions. Municipal departments of health appreciate their responsibilities for the issuance of working papers and for the investigations of industrial diseases. But these important elements in the origin and dissemination of diseases, of all types and descriptions, do not dip down into the source of human ailments as deeply as the problems connected with the insufficiency of family income.

On the theory "that to know, is to act," one cannot avoid contemplating what action health departments are going to take in combatting incomes below that requisite for a healthful standard of living. It is not difficult to conceive intelligent, high-minded, far-visioned health officers taking steps to advance the pecuniary welfare of those now inadequately provided for. The issuance of resolutions by health boards on minimum wage laws or social insurance legislation is not beyond imagination. Bulletins on the relation of hours of labor and fatigue poisoning to communal health might properly be distributed for the education of the general public. Organized and systematic attempts to improve working conditions, to raise the age at which children may enter into employment, to prevent exploitation of women and children might well be included in the programs of health departments.

No more vital phase of public health work can be imagined than that which attacks the single one which is recognized to be most responsible as a determining factor in securing "sanitary housing, ample food, adequate clothing, wholesome recreation"

and the various other viable conditions essential to the maintenance of health. The social significance of a health department is here manifest. It will undoubtedly require a considerable period of time before the proper steps are taken to advance civic medicine along these definite social lines. Health and low wages are opposed in spirit and in facts.

Laundries and Health.—Laundries have long been considered essential to the maintenance of general health. Cleanliness of garments is requisite for personal hygiene, for the prevention of personal infection and dissemination of disease. Schroeder and Southerland (*Public Health Report*, February 9) report their study of the relation of laundries to the public health, and their conclusions are in general most reassuring.

It is true that their investigations indicate that State factory laws are violated in the maintenance of hand laundries, thru the existence of living quarters on the premises utilized for laundry work. The use of the "blow can" for dampening clothes in Chinese laundries is hardly to be regarded as a safe procedure, as it may lead to infection, tho no evidence is adduced to indicate that such infection has occurred. The careless methods of marking and sorting clothes, and the contact of unclean clothing with that already laundered present possible sources of danger to the employees and to the community.

Thoro washing by hand, where each piece is treated separately, produces satisfactory results so far as the destruction of pathogenic germs are involved. In a sense, the hand laundries perpetrate a fraud upon the public because very little washing is done in the average so-called hand laundry.

Under present working conditions a heterogeneous collection of soiled clothes is tightly packed into bags or nets and sent to steam laundries to be washed. These nets are washed as units and are usually returned to the hand laundries in a wet condition and are dried under varying conditions of heat, moisture and sanitation before being hand ironed. Their investigation shows that steam laundries lack effectiveness in sterilizing the clothes handled in nets; and

the combined action of soap, water, heat, and disinfectants fails to destroy vermin and pathogenic organisms in netted clothes that are tightly packed. Under these circumstances, it is advisable that steam laundries should not return wet wash, but should secure the thoro drying of the clothes thru their drying houses, tumblers, mangles, and hot pressers, and thus ensure the destruction of the possible infective agents.

While the bacteriological investigation serves as the scientific basis for determining the degree of sterilization, it represents a test which is not duplicated necessarily under normal conditions. The addition of large numbers of colon bacilli in pure cultures suffices for laboratory experimentation, but does not duplicate the conditions likely to be found in the trade, particularly when the cultures approximated in numbers five hundred million per cubic centimeter. On the other hand, the data secured with relation to the infection of employees or the dissemination of disease to the community are inadequate to indicate conclusively that laundries in the past have actually been factors in spreading disease. The general tendency of laundries is to refuse to handle clothes coming from homes known to be infected. While this is not a universal practice, the gross proportion of the population utilizing laundry facilities out of the home does not constitute a large percentage of the total population in which communicable diseases are found most frequently.

Inasmuch as contagions, for the most part, are found in the poorer homes, which do not utilize hand or steam laundries, it is apparent that the likelihood of danger from laundries is minimal. The possibility of the spread of vermin is greater and requires particular attention from the public health standpoint in view of the suspicion attached to insects in the causation of various diseases.

Viewed from the public health standpoint, there is reason to believe that municipalities, erring on the side of caution, should institute further regulations for the maintenance and control of hand and steam laundries with a view to securing the enforcement of State factory laws and to protecting the health of employees from unsanitary conditions. At the same time proper conditions

for laundry work, particularly with reference to the use of nets should be required.

There is probably greater danger in the laundry work done in the homes of poor women than in the organized commercial work, when the soiled clothing is collected and returned after being washed, dried, and ironed in a commercial establishment.

Dermatitis and Eczema.—Medical nomenclature has ever been regarded as a secondary part of medicine which should not be altered save after painstaking investigation of the reasons for transforming terms hallowed by tradition. A term such as *rheumatism* has been recognized as inadequate to define most of the diseases previously regarded as covered by this term. A generation ago, a diagnosis of *malaria* was sufficient to cover general ignorance. The deaths of a half a century ago ascribed to *inflammation of the bowels* would today be classified as due to cholecystitis, appendicitis, salpingitis, septicemia, etc.

For years, *eczema* has served as the termological scrap basket of dermatology. Heiman, (*J. A. M. A.*, January 13, 1917) points out the identity of dermatitis and eczema in their histopathology and pathogenesis. The point of differentiation between the two apparently is that the cause of a dermatitis is ascertainable, but in most instances is pathogenic only in selected individuals, while the presence of an exciting cause in eczema is not readily demonstrable.

The causes of eczema in general have been classified as internal, external, and the activity of external agents operating in individuals for some reason predisposed.

The distinction between eczema and dermatitis seemingly is academic. The characteristic of eczema to the clinicians today is in the fact that it is a dermatitis of unknown origin. It would be far more scientific to cease to regard eczema as a disease *sui generis* and to interpret it as a dermatitis, the cause of which should be discovered in order to determine the most rational treatment.

Knowles, in the same issue of the *Journal*, arrives at the same conclusion, and points out that a large proportion of cases of so-called eczema are due to definite ex-

ternal causes, one-half of which are of occupational origin. He also deems it desirable to sacrifice this relic of antiquity and substitute for it the more reasonable and scientific term "dermatitis." If there is no distinction, clinically and histologically, between the two conditions, it is unreasonable to continue the use of two terms for the same disease. The duration of the disease or the type of irritant producing it hardly serve as sufficient warrant to continue the existence of a differentiating term.

The nomenclature of dermatology is particularly chaotic as evidenced in dermatological literature. Tendency towards simplicity is to be welcomed, and the discontinuance of terms outgrown is to be hailed with delight. By recognizing the identity of eczema and dermatitis, an impetus will be given to the study of those forms of dermatitis for which thus far the etiological factor has not been determined. The dermatitis of unknown cause represents the type of dermatitis to which the term *eczema* has been applied.

It is probable that internal causes, particularly those related to digestive and metabolic disturbances, will receive renewed attention. It will require a little time for the profession to adapt itself to this change in terminology, but the scientific fact remains that the eczema of old is a dermatitis and that *dermatitis* is the term which should be applied to it.

The Problem of the Habitual Drunkard.—One of the most difficult problems of the municipal authorities and of all social workers is the management of the habitual drunkard. An interesting item recently came to our notice in which it was indicated that in Vienna the Austrian government had decreed that habitual drunkards henceforth were to be considered in the same category as the insane, and were to be accorded treatment on a similar basis.

Doubtless this is a war measure; but like many another hygienic necessity born of the exigencies of this world war, it is a splendid step in advance.

Without a doubt the man who cannot control his craving for liquor (or drugs, or crime) is not normal; and because his abnormality is not merely a serious menace to

himself, but imposes upon his family, his neighbors and his community, he is in a position very similar to the insane or the criminal. The sooner he is forcibly removed from the circumstances which promote his weaknesses and add to his burdens and those of his family, the better it will be for all concerned.

In this country we could with much advantage emulate the example of the Austrian authorities; and while we would immediately hear from those who are strong on "personal liberty," there is no doubt that the habitual drunkard and those affected by his pernicious habit, would be the better of earlier action on the part of the authorities than is at present the rule.

Pain.—Nothing is more distressing or disastrous to the human being than pain. It assumes many forms, which require individual and antipodal treatment. Narcotics, particularly opium or its alkaloids, are considered panaceas, and therefore all too often resorted to, notwithstanding the many objections to their use. Heat and cold, either one or alternated, will often serve as most excellent analgesics; a change of posture, if the pain is in a limb, will sometimes suffice to relieve; or when pain results from exposed nerve terminals, such as often follow burns, wounds, etc., the application of fomentations will many times relieve. To treat pain, however, is usually but to afford a temporary measure of relief, for pain is but a symptom. The cause should always be carefully sought for, and when found, it should be removed or corrected as promptly and effectively as possible, with minimum disturbance of bodily functions. Gastric and intestinal disturbances frequently give rise to pain which can often be relieved by lavage or laxatives. The pain of rheumatism, and sometimes that of gout may be surprisingly lessened by restricted diet, elimination and immobilization; neuralgias by isolation, rest, embrocations or counter-irritants.

It should constantly be remembered that pain is but a danger signal, an evidence of disordered function and whenever possible treatment should be instituted accordingly.



Surgical Immunity.—Discussing the problem of surgical immunity (*New York Med. Jour.*, Dec. 9, 1916) W. Wayne Babcock says that for the successful treatment of many surgical conditions the production of an artificial immunity is much less important than the maintenance of the normal bodily resistance. Too frequently we forget that vaccines and serums can never replace such timeworn aids to immunity as rest, support, noninterference, protection, and other important measures that have been reiterated and forgotten many times. It has been well said that surgery should be retaught every seven years, so that the useful things of the past are not forgotten and thrust aside by the innovations of the present. It is my intention briefly to review a number of conditions in which attempts to produce artificial immunity are of secondary importance in the treatment of the affection. As surgeons no longer believe that disease is an evil to be scourged from the body by fire and other drastic measures, inflamed tissues are handled with greater gentleness, not because the handling is painful, but because we realize that traumatism may destroy the local immunity, or may diffuse infection beyond imperfectly erected tissue barriers. It has long been recognized that absolute, general, and local rest, frequently determines whether a contused wound leads to disorganizing infection, or a simple aseptic wound healing. A crushed hand treated by asepsitization, and a careful dressing, but put back at once to work, is frequently followed by a disorganizing phlegmon that spreads up the arm. The same injury treated with a simple wet dressing, support, elevation, and complete local and general rest, may heal without inflammatory reaction. Against the handicap imposed by the first plan of treatment, no vaccine or other measure for the production of artificial immunity will avail. Again, many of us have seen a crushed and lacerated hand treated by painstaking asepsitiza-

tion, and the most accurate suture of the divided deep and superficial tissue, swell, become necrotic and disorganized from tension, infection, and secondary inflammatory processes. The same injury treated without suture of the divided tissues, especially the overlying skin, but by the free division of any skin that may cause constricting tension when the secondary swelling occurs, may heal with no sign of infection. No method of artificial immunity has been devised that will take the place of absence of local tension, or local or general rest in the treatment of certain wounds.

Therapeutic Results.—"All along the therapist may test the efficiency of his personal work by comparison with the results of general practice," states Konkle (*New York Med. Jour.*, Jan. 13, 1917). "This he should conscientiously and assiduously do. Pausing thus to check, to orient himself, to take his bearings, not only absolutely but also relatively, if he finds that his average success is equal to the average success recorded as the outcome of enlightened effort in the field at large, then he should be satisfied; if his surpasses the common ratio, he may congratulate himself. Having proved that he is abreast or in advance of the professional body in attainment and accomplishment, he need not apologize for measures or methods. With his mortality rates speaking for him, he will not have to plead his own case. Gauging with such a standard his operations and endeavors, he will dare to be independent and original—to ignore fashion—to defy the toils of the *bête noire*. He will not be 'tossed to and fro, and carried about with every wind of doctrine.' He will not heedlessly follow the thoughtless throng to the worship of false gods of healing—impotent, ephemeral gods, which in number and variety outclass the gods of old Rome. But he will be a good, true, strong doctor. His work may not be dramatic nor spectacular; finer, nobler still, it will be the expression of power and virtue. And he will be content, knowing that worth is better than show, and feeling that rather than a mere refined and cultured counterpart of the

African fetish doctor or the Indian medicine man, he would prefer to be forever a Telemachos exploring earth and sea under the aegis of Pallas Athene, or a Numa in devoted discipleship sitting at the feet of divine Egeria within her grotto at the base of the Cælian Hill."

Large Business and Medical Supervision.

—"The time is not far distant," says W. J. Stone (*Jour. of the Mississippi Valley Med. Assn.*, Jan., 1917) "when all corporations employing large numbers of industrial workers will recognize the efficiency value which follows medical selection. This will involve regular medical examinations, the control of intemperance, as well as social service in the homes. The contentions of the American Association for Labor legislation, which may be taken as the best organized work for the improvement of workers along the line of health insurance, are deserving of commendation. The legislation proposed in the various states not only attempts to secure compensation for the worker after he has become ill, but aims to prevent disease by proper regulation of devices and methods which are inimical to health.

What is needed to make such legislation effective is emphasis upon the phases which have to do with preventive medicine. Such a plan would take into account the longer life afforded the worker with incipient tuberculosis, when suitable employment where short hours, good air and little dust is found; the longer life afforded the worker when incipient vascular disease is discovered and appropriate advice given; the elimination of typhoid among employees by preventive inoculation; the prevention of small-pox by vaccination; the elimination of dangerous trades, the elimination of alcoholism and other examples familiar to everyone.

The value of such legislation would be to greatly increase our national vitality. The work of the Life Extension Institute, whose function is to disseminate knowledge of preventive medicine and to provide periodic examinations of those in health in order that disease may be detected in its

incipiency, is worthy of every encouragement and help from the laity as well as the profession. The movement is bound to grow and its sphere of usefulness is unlimited."

Milk Borne Infections.—From his statistical study, altho it is incomplete in several respects, E. R. Kellogg draws several very interesting and suggestive deductions.

Continuing (*Jour. A. M. A.*, Dec. 30, 1916) he says "Analysis of Massachusetts investigations does not corroborate the statements to be found in various places in recent literature, alleging that milk is a very important channel of infection in a quantitative sense in this group of diseases.

Massachusetts experience would seem to indicate that even in raw milk supplies, with widely varying conditions of supervision, diphtheria transmission thru milk is so rare an occurrence as to be negligible.

The transmission of scarlet fever thru milk, while much more common than diphtheria, is of very small percentage significance.

Typhoid fever in this large series, extending over a period of years, was reasonably attributed to milk infection in a much larger number of cases than diphtheria or scarlet fever, but these amounted in all to only 5 per cent. of the total cases of typhoid reported, a very different story from the statements of from 10 to 25 per cent. frequency of typhoid infection by milk that can be found in various places in recent public health literature.

Septic sore throat is par excellence the milk-borne disease, but its occurrence is fortunately relatively rare. When it does occur, it is nearly always in epidemic form and is of more serious consequences.

In all probability, the menace of tuberculosis is the best justification that we have as practical sanitarians for the amount of propaganda that has been carried on and the money that has been expended by health authorities for the supervision and control of milk supplies, so far as such supervision aims at the suppression of communicable diseases."

The Determination of Gastric Ulcer.— "Simple gastric ulcer" says Harris Weinstein (*New York Med. Jour.*, Jan. 6) "cannot be demonstrated by any known method short of actual inspection. The history, clinical or laboratory evidence, and radiographic findings are alike disappointing. Assuming the existence of a simple gastric or duodenal ulcer without complications, we cannot but admit the efficacy of proper medical treatment. Recrudescence of the ulcer occurs where the prescribed regimen is grossly abused, or where the etiological factor is operative and cannot be removed. Healing of an ulcer depends upon sparing of the mucosa, neutralization of hyperacid contents when present, improvement of the general nutrition and of cell resistance, and removal, if possible, of the focus of bacterial invasion. Even in the presence of multiple ulcers which constitute about twenty per cent. of the cases, these desirable results can be attained by proper management. The arguments advanced in favor of surgical interference cannot be lightly set aside. The occurrence of a possible hemorrhage, of chronic oozing, and resulting anemia and debility, of chronic induration and subsequent obstruction or hourglass contraction, of acute, subacute, or chronic perforation, and of probable malignant degeneration, cannot wholly be prevented by medical means. Radical surgery, which alone can be relied upon to prevent the dangerous complications above enumerated, suffers from a rather bad reputation in point of mortality. To make resection still more undesirable, gastric ulcers are frequently inaccessible, as they occur in about eighty per cent. of the cases on the posterior wall of the stomach; are often imbedded in a mass of adhesions, and are just as frequently not found at all."

Dr. Jelliffe Joins Staff of New York Medical Journal.—As we go to press we learn that Dr. Smith Ely Jelliffe has joined the editorial staff of the *New York Medical Journal*. This is welcome news to the many friends of all concerned.



TUBERCULOSIS IN GREAT BRITAIN AT WAR.

BY

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The number of men discharged from the combatant services of Great Britain on account of tuberculosis since the beginning of war has drawn the attention of the medical and lay press of that country to one aspect of a very complex problem. Tuberculosis not only renders men unfit for active service, afloat or ashore, but also carries in its wake low wages, unemployment, and poverty, and by these circumstances it is associated with many of the difficulties of our present and future national existence. On these grounds an attempt should be made to solve the problem before our great armies return, for if apathy and indifference have their way it may be that the whole question will be submerged for a time amid those vast social and political changes which wise men see in the immediate future.

The control, treatment, and eradication of tuberculosis can only be achieved by a policy based on knowledge and foresight. As a disease, tuberculosis is one of the many realities of national life against which neither sentimentality nor political expedi-

ency can prevail. Three aspects of this question stand out clearly and demand a settlement, each on its own merits. Firstly, there is the amount of a pension, for with the purchasing power of a sovereign reduced to eleven shillings, it is obvious that a sum of money which might have constituted an adequate pension during the Napoleonic Wars, can only now be regarded as an inadequate pittance. Secondly, there are the men to whom pensions should be granted on account of tuberculosis, and lastly there is the provision for treatment on national lines which will apply to every aspect of the disease.

In order to state a definite policy the tuberculous patients discharged from the services may be classified in four large groups.

1. There are the men, free of tuberculous infection at the time of attestation, who became infected and developed active disease in the services. They are entitled to a full pension for life since their disability is wholly due to the conditions of service.

2. Some of the men invalided out of the services never suffered from active tuberculosis in civil life but nevertheless had the seeds of latent infection which developed under the strain and stress of active service into declared aggressive disease. It would be idle and uncharitable casuistry to speculate as to whether a man might not have broken down had he remained in the easier and less exacting circumstances of civil life. Such a man had earned and won the benefit of the doubt, and ought to be pensioned on the ground

that his infirmity was aggravated by the conditions of active service.

3. Another group consists of those who were treated prior to the war at tuberculosis dispensaries, at sanatoriums, at hospitals, or at farm colonies, and who regarded themselves as cured inasmuch as they were able to earn their livelihood in civil life. In the belief that they were able to serve the Empire they joined the services when the call first came. Many have withstood the strain of war, and in so doing have shown how much scientific treatment is able to achieve for individual patients. In other cases the disease returned, the men broke down, and have been discharged as unfit for further service. When they joined they signed the attestation certificate in perfect good faith "I hereby certify that to the best of my belief I have never suffered from * * * any other disease likely to render me unfit for His Majesty's service." They were allowed to serve after having undergone a medical examination for physical fitness and for the purpose of excluding active disease. Lastly there is the patriotism which led them to join, and that it is well to remember in the middle and at the end no less than at the opening of war. On these grounds such men have a right to claim that their relapse was aggravated by the conditions of active service.

4. In this group there are consumptives, whose disease had rendered them unfit for employment in civil life but who nevertheless succeeded in joining the services. An instance of this has been recorded by me in the *Lancet* of 3rd June, 1916. "One such recruit joined one branch of the services three times in eighteen months and when seen by me had been twice discharged. For two years before the war he had done no regular work, and at the time of attestation his name was on the waiting list for admission to a sanatorium in the north of England. During his time in the service he only appeared for duty on three occasions and went 'sick' each time. The remainder of his service was spent in hospitals. When I asked him why he had joined again after having been discharged he replied with engaging frankness, 'It's easier than working at the docks.'" One Wild Goose does not make a Michaelmas, but further evidence is at hand. In civil life it has been noted that there is a falling

off in the attendances of male patients at tuberculosis dispensaries, and in many parts of the country the waiting lists for sanatorium treatment for civilians is much reduced, so that it is not improbable that a certain number of these lost patients has entered the military services.

It may be asked how did these patients pass the doctors, but the lay critic, tempted to wholesale criticism of doctors, should remember that at the beginning of war the total supply of men was relatively small in proportion to the numbers required, and, consciously or unconsciously, many a doctor, believing himself to be acting in the national interest, must have had at the back of his mind the idea "How many men can I possibly pass," rather than "How many can I possibly exclude." Again the number to be examined was relatively large in proportion to the number of doctors and to the time available for examination. These circumstances did not allow for the searching clinical examination which even by the hands of an expert may be required to detect the less obvious forms of disease of the lung.

If pensions are granted for disability "directly and wholly caused by military service," it is clear that those who became infected and developed the disease after joining the services, and those in whom latent infection was lit up under conditions of strain, are entitled to a pension. It would be entirely against public interest to grant pensions to those who were suffering from active disease at the time they joined the services. The very practical point now arises of devising some method of distinguishing the deserving from the undeserving.

The Local Government Board of England has recently called upon medical officers of health to forward to the Army Council the names of men of military age

who have been notified since 1914 as suffering from tuberculosis. If that information is to be used for the negative purpose of not calling up for military service the men who have been notified, there are no great objections to this procedure.

On the other hand a suggestion has been made that the records in the hands of the public health authorities should be utilised for the purpose of deciding pension claims, the idea being that pensions would be granted to those who had not been notified as suffering from tuberculosis, and refused to those notified before the war. There are very grave objections to this proposal. A private and confidential statement about a patient has been given by a doctor to a medical officer of health, on the written assurance of an Act of Parliament that no action, except such interference as is already sanctioned by law will affect the patient. To use information, granted on that understanding, even if only for the purpose of assisting another Government department to annul an unjust claim, is probably illegal, and is most certainly an attack on the position of privileged confidence which necessarily must exist between patient and physician, and which the medical profession has always rightly guarded with jealousy.

Other objections, not less serious, at once arise against the above proposal. It is a commonplace in general medical practice that many patients do not seek advice until the disease is so advanced that very little can be done in the way of curative treatment. For years past the advantages of early and accurate diagnosis have been urged upon the medical profession and the laity. If the early recognition and notification of pulmonary tuberculosis comes to be associated by large numbers of the com-

munity with the deprivation of pensions which would otherwise have been granted for services in war, it will only increase the prejudice of an ignorant public against the advantages of early diagnosis and treatment. All the men in Group 3 would be refused pensions without any enquiry into the merits of their cases, and as a ridiculous contrast many a chronic consumptive in Group 4, who had hitherto passed in the world merely as one who had a "weak chest," would receive a pension for services never rendered.

It is surely not impossible to devise a method of deciding these claims, whereby individual injustice will be reduced to a minimum. One simple and straightforward procedure may be suggested. A pension for life might be granted with justice to every man invalided from the services on account of tuberculosis, who produced evidence from his insurance books or from his approved society that for six months prior to attestation he was earning his living in civil life, or if unemployed that it was not by reason of this disease.

Recently cases have been reported of men discharged from the services with tuberculosis, who died in Poor Law Institutions. Such happenings have naturally aroused public interest and protest in the press. A public interest in tuberculosis, even if only awakened by the calamities of a European war, is to be welcomed, although to those who previously strove to awaken that interest it always did seem unjust that any man or woman, soldiers broken in our industrial wars, should have to die under the poor law on account of a preventable disease, contracted thru no fault of their own. There is always a tendency when public opinion is suddenly aroused to suggest unpracticable remedies. Thus it has been proposed that

the service authorities should undertake the treatment of the above cases. In this connection it is essential to remember that it is no part of the duty of these authorities to organise schemes of treatment for those invalided from the ranks. Moreover as regards tuberculosis the results of treatment are more effective when carried out by the civil authorities. Thus in the United States Navy the introduction of naval sanatoriums was followed by a rise in the ratio of tuberculosis owing to the tendency towards discharging patients with arrested disease back to duty, whereas service afloat is unsuited for any tuberculous patient. Again the sole duty of the medical services of the navy and of the army is to raise to and to maintain the health of the combatants at the highest degree of fighting efficiency and in this way they best contribute to the striking power of the Empire. It is therefore against the national interest to agitate that the services should provide for the treatment of those discharged from the combatant ranks. Such men have returned to civil life and it is the duty of the civil authorities to make provision for their treatment. This said, it may be admitted that if the proportion of tuberculous patients warranted the belief that military service increased the tendency of latent infection to develop into active declared disease, the services might make a further grant to those civil authorities on whom the burden of treatment must eventually fall.

On the other hand, the problem would be greatly simplified if those tuberculosis experts, who now hold commissions in the navy and army, were employed in detecting the disease before men were accepted for service, and in advising as to suitable treatment after discharge in the cases of

those who have developed the malady in the services.

Apart from these objections to the treatment of discharged invalids being undertaken by the service authorities, the actual schemes for treatment which some would like to see adopted by the authorities are very imperfect and incomplete. For example, service sanatoriums have been advocated. Now even if sanatorium treatment was provided for every tuberculous sailor and soldier, little would be done to eradicate the malady, since the men would return to home conditions under which the disease would again develop and spread. Such a scheme would not touch the silent stream of tuberculous infection flowing thru childhood to adult life in our great industrial centers, and finally declaring itself as active aggressive disease. Moreover the great majority of early cases may be treated successfully in their own homes in great cities, so that there is not the necessity even if it were practicable to draft every patient to a sanatorium.

There has also been the preposterous idea of segregation camps in which the invalided consumptive would be compelled by law to reside until he died. Apart from its inhuman interference with individual liberty, this scheme could only do harm. In the city of New York compulsory segregation is in vogue and has not reduced the death rate. The reason is not far to seek. It is but natural that the patients, rather than enter an institution from which none return alive, should disguise the facts of their illness, creep away to garrets, and die without medical attendance. Again, tuberculosis is a disease, not of months but of many years duration. Long before the patient enters the last stages of his illness, he has been spreading infection. Too often

he does not seek medical advice until the disease is well declared, and if recognition of the disease were followed by deprivation of liberty there would be a strong personal reason for further concealment.

Segregation is a remedy which can neither cure nor prevent the disease. It would not touch thousands of infected people, living under unphysiological conditions, and these people may be intermittently infectious long before their illness is detected by themselves or by their physicians. On the other side, it is possible to exaggerate the infectivity of this disease. Given a normal state of health a massive dose of infection or long continued infection is generally required to induce active disease. For this reason the educated consumptive, the one who has a knowledge of simple preventive measures on which he acts, is a danger to none. It is the unknown, undiagnosed, and ignorant patients who are menaces to their own families and to the community.

All these are old heresies long since hunted to the stake, but of late a new attitude has been adopted in certain quarters—that all prophylactic and curative measures against the disease are of secondary importance since the only method of stamping out the malady is to rebuild the houses of the poor.

In many countries, notably in Scotland between 1870 and 1881, the tuberculosis death-rate, during a period when little attention was paid either to the infectious nature of the disease or to its prevention, fell so rapidly that had the rate of fall been continued the malady would now be extinct.

Only one of two interpretations of these facts is possible. It might be held that the incidence of tuberculosis depends not on

infection but on the conditions of housing. In that case if the housing conditions were improved the death-rate would fall and eventually vanish, and any direct measures against infection would be unnecessary. Equally logical is the view that improved social conditions raise the general resistance of a community so that its members are better able to withstand tuberculosis or any other infection. By experiment we know that an animal in poor condition succumbs more rapidly to a smaller dose of tubercle bacilli than an animal in good condition, and that to the same amount of infection a starved animal will succumb more quickly than a well-fed animal. Thus a raised general resistance of any community should result in a rapid fall in the phthisis death-rate. Nevertheless, tuberculosis being an infectious disease, massive or prolonged infection will eventually overcome the highest degree of resistance, and without direct measures against the spread of infection improved conditions of housing will not lower the mortality beyond a certain point. It will always be just as easy for a careless consumptive to infect his family in a well built as in an ill built house.

Leonardo da Vinci once wrote that the unforgivable sin was the suggestion of falsehood as truth. If it were calmly stated that tuberculosis is not an infectious disease few would be misled, but the statement that tuberculosis is an infectious disease whose incidence is but little affected by the prevention of infection is bound to deceive. The suggestion is that direct measures to control and eradicate the malady are more or less useless, and the result of this suggestion is to postpone the responsibility for combatting the evil until such time as the country can deal with

what is vaguely known as the Housing Question. Now as the time seems distant when our finances will permit of costly experiments in social reform to be undertaken, it is well to consider more practical and immediate measures.

The coordinated scheme for the control of tuberculosis was recommended to every local authority by the Department Committee on Tuberculosis. In the center of each area should be the Tuberculosis Dispensary, a collecting and distributing station. To the dispensary, patients come for diagnosis and treatment, and from the dispensary a doctor and nurse visit the patients in their own homes. Those in contact with each case are examined, and by clinical, tuberculin, and x-ray tests early disease may be diagnosed. All patients and any structural defects in their homes are notified to the Medical Officer of Health. Cases in need of monetary aid are referred to the Charity Organization Society.

From the dispensary patients are distributed for treatment. Children in whom the disease has been recognized in the "seedling stage" attend an open air school under medical supervision. Early cases without fever receive open air treatment in their own homes, supplemented by therapeutic and specific treatment at the dispensary without interfering with their daily occupation. Suitable cases are sent to sanatoriums. There a system of graduated activity is commenced, and this may be continued at a Farm Colony, where the patient's resistance is further raised. As a result of these measures he is able to maintain himself by manual labor on returning to industrial life. Again on his return there is less risk of a breakdown since the physiological circumstances of his home are under the supervision of the dispensary.

Cases too advanced for sanatorium treatment are sent to beds in hospitals for observation, for vaccine, and for surgical treatment when these are indicated. Patients dying in homes, where nursing is possible and the risk of infection has been obviated, remain under dispensary supervision. Others in less fortunate circumstances are admitted to hospitals for advanced cases. In all its educative work the dispensary has the assistance of a committee of voluntary workers, and on this committee other social agencies are represented.

It is a simple matter to restate this scheme on paper, but its success or failure depends on the manner in which the details are carried out. Some of the difficulties may be indicated. Clinical experience is essential for the diagnosis, classification, and treatment of various groups of cases. If unsuitable cases are sent to sanatoriums or if curable cases are discharged from sanatoriums too soon, before the disease is arrested, the result is a waste of money. Again, certain aspects of the work are irksome. It is not an Alpine holiday to climb long flights of stairs, and yet this is essential if the "March Past" is to be anything better than a farce. Many contacts, often the very ones it is most necessary to examine, are shy of attending the dispensary, and it is fair to say that the work of a dispensary is not efficiently done unless at least sixty per cent. of all contacts are examined. Again it is necessary for the dispensary to win the voluntary co-operation of the family, for the value of sanatorium treatment is lost if the patient returns to unhygienic conditions at home, no matter what be the architectural style of his house, and it is possible, apart from structural alterations, to improve by a hun-

dred per cent. the conditions in many of these homes with the help of the occupants. Apart from keenness in the work the prevention of tuberculosis is essentially a problem in clinical medicine, and for its solution experienced clinicians are required. Now an expert knowledge is not to be gained by a few months apprenticeship, nor are expert clinicians to be attracted by low salaries.

In areas where the tuberculosis scheme is entirely in the hands of the public health authorities, another difficulty may arise. If the tuberculosis officer who is doing the actual clinical work is merely granted the status and pay of an assistant medical officer of health, certain consequences are likely to follow. Those who have specialized in the clinical and scientific aspects of the disease will not be attracted, and the occupant of the post will realize that advancement lies along the lines of purely administrative ability, so that the clinical side of the work may suffer. Should it be otherwise, and if years are spent in attaining to a certain degree of clinical skill, then his subsequent appointment to a purely administrative post will mean a loss to the community of gifts not won without effort. During the past ten years the scope of our public health service has been greatly extended, and now includes various fields of purely clinical medicine, such as the supervision of infants, of school children, of tuberculosis, and tomorrow of venereal disease. In the State of New York the heads of each department of public health activity, administrative, clinical, bacteriological, and pathological, have an equal status on one board, and there is an opportunity for the public health service of Great Britain to develop these new fields to the greatest advantage by granting equal prizes for clinical

merit as may now be won by administrative ability. These matters have been discussed here without prejudice, as they are intimately concerned with the success or failure of any direct attack on tuberculosis.

The principles of this coordinated scheme, since its creation in Edinburgh by Sir Robert Philip in 1887, have been welcomed and adopted thruout the world. It is a complete plan for the diagnosis, treatment, control, and eradication of tuberculosis. To deny the principles on which it is based is to deny that pulmonary tuberculosis diagnosed early may be easily arrested, that the infectious consumptive by education may be made innocuous to other people, that the unrecognized cases are the greatest menace to the community, and indeed that tuberculosis itself is an infectious disease. The keynote of the Edinburgh System is that no case of this disease should remain without treatment.

A large amount of public money has been expended on the treatment of this disease. In a few years the people will ask for results, and if today there are cases so uncared for that a protest is drawn even from the lay press, it is well to enquire how far the coordinated scheme has been adopted in that area, and if adopted in theory how far in practice. Should its essentials have been mutilated and its machinery thrown out of gear, it will be useless to plead that the scheme itself was of no value, and still less courageous or successful will be any attempt to shift the responsibility for the prevention of the disease. Too many years have been spent in a strenuous campaign for the general acceptance of these principles to tolerate any line of criticism which is based on insufficient knowledge and inefficient execution.

There are many with a life interest in

tuberculosis who have been called to other work on account of the war. These have a right to expect that those in whose hands the prevention and treatment of tuberculosis has been left will "carry on" to maintain and develop on sound lines the machinery in the hands of the civil community.

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HYPERTENSION UNDER THE TREATMENT WITH RADIOACTIVE MINERAL WATER.

BY

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In cases of high blood pressure several other methods have been added to the medicinal treatment of this condition. Dietetic measures, physical applications, hydrotherapy, high frequency, change of air, the use of spas have been endorsed.

We are familiar with the results of emanation treatment in the form of baths, inhalations, subcutaneous injections (Loewy¹, v. Noorden², Benczur³, Armstrong⁴, Falta⁵, Glaessgen⁶, Zueblin⁷, Proesch⁸, G. D. Kahlo⁹.)

The untoward effects of acute cardiac failure observed on patients who undergo treatment in radioactive pools must have some connection with the effect of emanation upon the cardiovascular apparatus. Such therapeutic influence being admitted, it seemed of interest to study a few cases whilst they consumed radioactive Mountain Valley water.

In a previous paper (E. Zueblin¹⁰, *Interstate Medical Journal*, 1915) I published the quantitative tests of radioactivity in

bottled Mountain Valley water. As chemical and physical examination alone would not permit any conclusion as to the advisability of this water, the following cases from the hospital clinical material and from private practice were selected.

Case 1.—M. Z., aged 53. Complained for several years of a sensation of fullness in the head, soreness in the leaders of the neck, general tiredness, slight shortness of breath after exertion, no swelling of feet.

The patient was treated for several years for high blood pressure, then was advised to use Mountain Valley water one-half gallon a day; subjectively he felt much relief. Patient told me that at the beginning of this *drinking cure* his blood pressure varied between 230-240. He kept to a diet in which the proteids were reduced, the dark meats omitted; his digestive functions were slightly impaired with a tendency to indigestion, constipation and eructation of gas. The urinary examination, as made several years ago, showed a faint trace of albumen, phenolsulfonphthalein test showed an output of 42% in 2 hours. The heart findings when patient was examined on Nov. 24, 1914, showed the apex beat slightly outside of the mammillary line in the 6th interspace, the upper limits at upper border of 3rd rib, and slight enlargement of the heart to the right, overlapping $\frac{3}{4}$ of an inch the right sternal border. Auscultation of the heart showed an indistinct first sound, over the tricuspid; the first sound was indistinct, of a murmuring character, the 2nd sound was snappy and better marked, remarkable accentuation of the 2nd aortic sound, of ringing character, 2nd pulmonic sound also accentuated. Pulse 84, of rather high tension.

Urinary examination.—Total amount in 24 hours 2,610 cc; specific gravity of night portion 1,017, of day portion 1,007 cc. In both specimens slight trace of albumen found, no casts, no sugar, indican medium amount.

Patient was put on 8 glasses of Mountain Valley water taken in small portions throughout the day. He noticed less tiredness and fatigue and less headache. The blood pressure, which was before treatment 230 systolic and 130 diastolic, showed the following values:

Nov. 17th	197	systolic	rest in bed, and the blood pressure observed previous, during and after Mountain Valley water medication.
	132	diastolic	
Nov. 24th	200	systolic	The following data for the blood pressure was obtained:
	136	diastolic	
	92	pulse	

Period 1. Before Mountain Valley water medication: systolic blood pressure 185; diastolic 130.

Period 2.	On 11/10 was given 6 oz. of Mountain Valley water 3 times a day.				
	On 11/11 the blood pressure was	225	Systolic	140	Diastolic
	On 11/12 the blood pressure was	185-190	Systolic	114	Diastolic
	On 11/13 the blood pressure was	220	Systolic	120	Diastolic
	On 11/17 the blood pressure was	185	Systolic	115	Diastolic 6 P. M.
	On 11/19 the blood pressure was	220	Systolic	120	Diastolic
	On 11/20 the blood pressure was	242	Systolic	158	Diastolic
Period 3.	11/21	160	Systolic	110	Diastolic 6 P. M.
	11/22	180	Systolic	138	Diastolic 8 P. M.
	11/23	178	Systolic	138	Diastolic 7 P. M.
	11/24	158	Systolic	128	Diastolic 7 P. M.
Period 4.	11/25	160	Systolic	...	Diastolic 7 P. M.

The patient had consumed daily 2 quarts of Mountain Valley water.

From Nov. 24th-29th the water was reduced to 1 quart per day. The patient felt improved as regards the general tiredness and headaches; the bowels were regular, appetite was good, pulse 86, blood pressure—190 systolic, 122 diastolic.

On Dec. 5th patient reported some improvement as noted above, the blood pressure remained at 190 systolic, 116 diastolic; after that the patient, slightly improved, was lost sight of.

From this instance it seems that the blood pressure was reduced during the use of Mountain Valley water, there was also some improvement noticed in the other complaints of the patient. Whether this effect was lasting or merely temporary only a further examination of the case could decide.

Case 2.—M. I. A. Aged 56 years, colored, seamstress, married. Suffering of general arteriosclerosis. Had a paralytic stroke a few years ago with remaining paralysis of both lower limbs. Complained of headache, dizziness and vasomotor irritation (flushes).

Presented at physical examination normal limits of the heart, but snappy, metallic aortic and mitral sounds.

Blood pressure varying from 185-225 systolic. Blood examination showed 14,800 leucocytes. Wassermann reaction negative. Urine of high specific gravity 1,026 no albumen.

Arteries were hardened, tortuous and inelastic. Patient was kept on general diet,

From that date the Mountain Valley water was discontinued and the following readings were obtained:

11/28	140	Systolic	110	Diastolic	7 P. M.
11/30	154	Systolic	...	Diastolic	7 P. M.
12/2	160	Systolic	...	Diastolic	3 P. M.

The patient left the hospital on that day without the complaints expressed at her entrance in the institution. In this instance we see at the beginning of the Mountain Valley water medication and for the following 2 weeks (Period 2) rather an increase in the systolic pressure. In 4 instances out of 6 determinations the systolic blood pressure is higher than without Mountain Valley water. The diastolic blood pressure during the first 2 weeks in 2 instances out of 6 readings is higher than before the water medication. There is in the average a considerable increase in the pulse pressure.

In the 3rd week (Period 3) during which the Mountain Valley water was used we observe a decrease in the systolic pressure, which during the 5 readings is from 27-15 mm. lower than at the beginning of the observation (Period 1). Compared with the first 2 weeks (Period 2) the systolic blood pressure in the 3rd week differs from 84-27 mm. There is also observed a decreased diastolic blood pressure which differs from 2-20 points from the first readings without Mountain Valley water and from 58 mm. difference from Period 2. The pulse pressure consequently is considerable different

from the reading obtained during the 2nd period.

A readjustment seems to take place during the 3rd period, even at the end of this time we see a lower pulse pressure present.

During the 4th period we have a lower blood pressure than found in the first period, a difference which varies from 45-25 mm. for the systolic blood pressure.

As a result from our observation we may say that Mountain Valley water after causing at first a rise in the blood pressure, may, with a longer use of the water, result in a lower blood tension. Whether this decrease in the arterial pressure is a direct consequence from the use of the water, or whether the discontinuation of the medication causes that difference cannot be decided definitely. The probability that Mountain Valley water has this lowering effect must be admitted.

Case 3:—M. O. C. Laborer with general arteriosclerosis being referred to the hospital for delirium tremens.

The physical examination, besides high blood pressure, a varicose ulcer on his leg, symptoms of angina pectoris, did not reveal anything abnormal. Urine free from casts and albumen.

Blood pressure in the 1st period on Nov. 7th, 185 systolic, 100 diastolic.

Period 2. The patient received 6 oz. of Mountain Valley water before meals 6 times a day. The blood pressure on the 19th was found at 120 systolic, 80 diastolic.

Nov. 20—125 Systolic 80 diastolic

Nov. 21—105 systolic 60 diastolic

Nov. 22—135 systolic 80 diastolic

Nov. 23—140 systolic

Nov. 24—148 systolic

Nov. 25—148 systolic

Period 3. All Mountain Valley water medication was discontinued.

Nov. 27—108 systolic 82 diastolic

Nov. 28—120 systolic

Nov. 30—172 systolic 140 diastolic

Dec. 3—120 systolic 100 diastolic

Dec. 5—135 systolic 110 diastolic

Dec. 9—140 systolic 110 diastolic

After that time a moderate enlargement of the right ventricle was observed, the heart sounds became very indistinct.

Period 4. On the 12/30/13 the patient received potassium iodide medication grs. 5-10 tid. On Jan. 7/14 the blood pressure was 140 systolic

90 diastolic
on the 19th 145 systolic

The patient left the hospital after that time without any subjective complaints. The examination of the urine thruout his stay at the hospital never revealed the presence of any albumin nor of casts.

As a result from these data we may say that during the 2nd Period the systolic blood pressure was lower than during the first Period without Mountain Valley water. The difference was marked during the first 2 days of the observation, showing a difference of 80 mm. compared with the first period, after that a rise in the blood pressure took place but still remaining 37 mm. below the value ascertained in the first Period.

The diastolic blood pressure also underwent a change showing a difference from 40-20 mm. as compared with the first period.

The pulse pressure, high at the beginning of the first period, dropped down showing a difference from 30-40 mm. as compared with period 1.

In the 3rd period we have no constant readings; the systolic blood pressure after a low standing for 2 days gradually rises and shows on the 23rd day a difference of only 13 points from the value observed in the first period, after that the systolic blood pressure goes down showing a maximum difference of 65-45 mm.

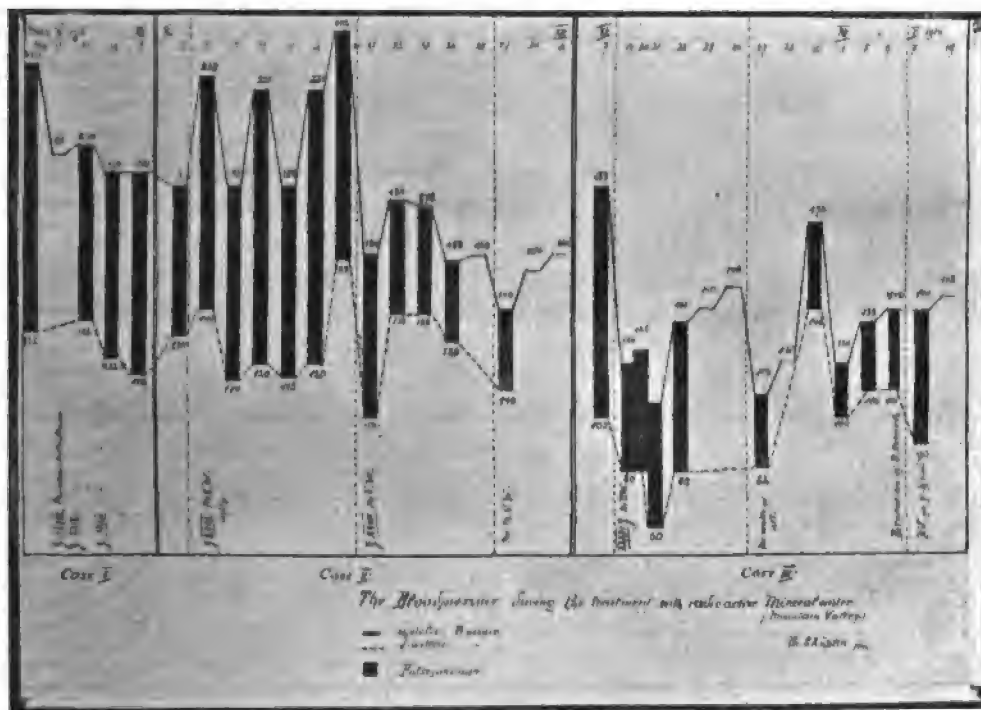
The diastolic blood pressure does not reveal constant figures; there is an increase in 5 instances, in one instance the difference is 18 mm.; 20 days after the observation was started, after 23 days we observe an increase of the diastolic blood pressure remaining 10-40 points above the highest value observed in period 1, consequently the pulse pressure drops considerably and we have a maximum difference of 65 points as compared with period 1 and a difference from 23-10 points with the figures observed during the 2nd period.

The question cannot be decided whether the low pulse pressure was a favorable factor for the onset of the failure of the right ventricle.

During the 4th period with iodide of potassium we have in the average a systolic blood pressure which is 40-45 points below the initial value observed in the first period. This figure seems in the average higher than those observed during the 2nd period.

With the last reading observed before the potassium of iodide was given hardly any difference could be noticed. If the readings are right it would even seem that potassium of iodide in this instance brought a rise in the systolic blood pressure. The diastolic blood pressure seems about 10 mm. lower than in the first period. The reduction of the diastolic figure seems not as considerable as during the 2nd period. The pulse pressure is increased if we compare the figures in the 2nd and 3rd periods. Compared with the first period there is a difference of about 35 points. In this instance we gain the impression that Mountain Val-

arthritis. This patient presented no distinct anatomical heart lesions. The heart sounds were indistinct, distant, the pulse accelerated, irregular and easily depressible. Daily 4-6 glasses of 6 oz. each, Mountain Valley water were given for about three months. The result was favorable for the articular manifestations, but slight edema of the ankles, dyspnea after exertion and palpitation of the heart became noticeable. The amount of Mountain Valley water had to be reduced and digitalis 10 mm. of tincture were given three times a day. Subjectively the pulse became more regular, the dyspnea and palpitation disappeared.



ley water has a favorable influence upon the reduction of the systolic and diastolic blood pressure, also upon the decrease of the pulse pressure.

The question remains undecided whether the dose of 36 oz. of Mountain Valley water given during a week favored the heart failure observed in the 3rd period.

This impression recalls another instance, namely:

Case 4.—Mrs. S., aged 46, married, housewife, who was treated for chronic

A few months later the cardiac manifestations were again noticeable, the patient consumed daily only $\frac{1}{2}$ bottle of Mountain Valley water. The pulse was 57, slow, irregular, not well sustained, the blood pressure was 112 systolic, 68 diastolic, pulse pressure 44. The patient complained of headaches which might have been due to venous stasis.

As a conclusion from our few cases we may state that Mountain Valley water can

under favorable circumstances reduce the blood pressure. In the average we find a decrease of the systolic blood pressure, which in older individuals may become excessive (80 mm.) and favor cardiac dilatation and failure; also a contrary influence, an increase can be noticed (up to 57 mm.). This fact should be remembered in cases of high tension where undesirable results may complicate the situation (apoplexia, etc.). The action is not always constant (v. Noorden², Kahlo⁹, Bissell¹⁴).

From the few observations at hand I agree with Loewy^{1,11}, that the diastolic pressure shows a diminution, after the discontinuation of the water, however, a rise may follow, a fact which may also favor heart failure when the systolic blood pressure remains low.

We cannot exclude the possibility of a change in the entire chromophil system, which may account for the intolerance of certain patients to radioactive treatment (v. Salle and v. Dormans¹²).

The treatment of high tension by means of radioactive mineral waters seems not harmless, and in the individual instances should be controlled by frequent readings of the blood pressure by the superintending physician. This must be emphasized in order to safeguard the patient and the physician.

Furthermore, it seems indicated not to push the amount of fluid absorbed, viewing the possibility that an excess of fluid is not well borne by all individuals, particularly those appertaining to an advanced age.

Notwithstanding the contention of certain authors that the blood pressure will be reduced by rest without any change in diet, (Rowntree) to my personal experience such an observation must be rare, since our ordinary hospital cases placed under favorable

hygienic conditions without medical and dietetic treatment will not show such a marked reaction. The conception that the therapeutic effect of a mineral water should be proportionate to its radioactivity holds not true by closer observation, as will be shown in a later study.

It cannot be denied that the advantage of natural mineral water before artificial salt solutions depends partly upon the variations in the electrical conductivity of their molecular elements, and from the amount of cations and anions (Kahlo⁹, Glenard¹³). Our knowledge along the lines of colloid chemistry is yet too restricted for the complete understanding of these subtle relations.

The subject, when must we consider high blood pressure an injurious symptom to be relieved by all means, is still under discussion and in that respect I may refer to the interesting papers and discussions of Bissell¹⁴, Riesman¹⁵, etc.

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FEES.¹

BY

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In our professional work the word fee can have but one meaning, so far as its etiology is concerned, and that is the amount charged for services rendered.

Fees have never been uniformly the same in all countries, nor in different sections of our own country, for the following reasons: (a) that physicians differ widely in their professional accomplishments, and consequently the services of some are worth more than others; (b) that to a certain extent our work is humanitarian and fees cannot be arbitrarily fixed, because some people are more able to pay than others; (c) that in the majority of instances the question of time and responsibility must play a considerable part in the charge for services rendered.

In rural districts where of necessity people (including physicians) live the "simple life," where the financial and social demands are markedly minimized, quite naturally fees for professional services should be less than in our metropolitan cities. Moreover, it has always appeared to me that my services might be worth more to a rich man than a poor one, e. g., a man whose income is only \$100.00 per month could not be considered worth as much to himself, his family, or the community, as one whose income is \$2,000.00 per month. Obviously, therefore, the same service rendered the rich man, who is thereby enabled to continue his work, should be worth more than it could possibly be to the poor fellow.

It seems reasonable that the services of a

physician with extensive experience, fortified by his having kept abreast of the time, are worth more to the public and the individual than those who have not done so. The services of the physician who has expended much time and money qualifying himself for special work, and thus has the experience naturally acquired by strict adherence to that especial line, are also worth more to the public than those of the ordinary physician, at least so far as that particular specialty may be concerned.

The physician has a perfect right to charge for his time and also for the services rendered. The individual can no more claim the moral right to visit a doctor's office without request and utilize his time, than he would to visit a store and consume the time of a clerk in social conversation. A prominent merchant once telephoned me to call at his office. I did so and was much disgusted when he said that "he only wanted to inquire if a former tenant of mine was a reliable person, and whether it would be safe to lease some property to him." I told him that the man had always paid me, but that he (the merchant) owed me a fee of \$2.00 for my visit to his office! After arguing the question for a while, he saw things in the same light that I did, and paid me the \$2.00.

It has always seemed to me that the physician should charge more for a visit ten miles in the country, than for a call from across the street. It is certainly worth more to properly reduce a fractured hip and secure adequate immobilization of the injured parts, than to correctly adjust a simple Colles fracture; and all things being equal, it should be worth more to treat a patient with diphtheria than one having a disease of less gravity. It is usually the custom in every community to charge certain fees for

¹ Read before the Louisville Medical Club of Louisville, Kentucky, October 6, 1916.

residence and office calls, etc., and for all the physicians in that particular community to conform to that custom. For instance, in Louisville it has been customary to charge \$2.00 for a day visit, \$3.00 for a night visit, \$10.00 for the first consultation, and \$5.00 for each subsequent consultation, to the same patient.

The last Kentucky legislature enacted what seems to be a very unfair law concerning the liability of employers. For example, if a workman is severely injured in the performance of his duties, and has to be removed to the hospital for hip joint amputation, even if a special nurse is required, the law provides for a maximum fee of only \$100.00 to cover everything. In order to make this amount defray all expenses, the insurance company has fixed the surgeon's fee at \$50.00, and the fees for other services are proportionately small. The public, or at least the workman, seems to be under the impression that the doctor's fee is thus paid in full, and vigorous objection is raised when the patient is informed that the amount allowed by the law only partially pays the bill!

So far as I am aware physicians are the only people in the world who are organized against their own financial interests, and as a logical result of this fact malaria, yellow fever, smallpox, diphtheria, typhoid fever, and nearly everything else, have almost entirely disappeared. I am not saying this is not right, but after the profession has done so much for the general public, I do claim that physicians should be well paid for what there is left for them to do. We are under no more obligation to the public than other people, excepting as already suggested that our work is in a degree humanitarian. What would be thought of a saloon-keeper who would openly advocate the enactment of a law

which would effect inevitable ruination of his business? Would he not be considered a suitable subject for the lunatic asylum if he became an ardent prohibitionist? Yet we do these very things, and the general public tries to make us believe we are acting only wisely! Personally, of course I think we have done the square thing, and I do not believe there is a man present who would not be willing to relinquish the practice of medicine and engage in some other line of work if by a single act of his own he could put out of existence every ill to which human flesh is heir.

By reason of the most excellent work accomplished by the profession, not only in the field of scientific medicine, but also in city, state and national sanitation, the need of the physician is gradually growing less, and at the same time specialists are becoming more numerous. I believe that in a short while the physician will become just as much (or more) of a specialist as the ophthalmologist of today. What is now left for the general practitioner of medicine outside of the field of diagnosis? He may be called upon to treat whooping cough, an occasional case of typhoid fever, or pneumonia; and most doctors still practice obstetrics! In his diagnostic field or science the physician becomes merely a "dispenser of patients,"—operative work goes to the surgeon, genito-urinary patients must be referred to the urologist, and those with eye, ear, nose and throat diseases to the specialist in that line of work. I hope the public pays the general practitioner for such service; the laws are so framed that the specialist is powerless to help him!

In this connection, I seriously doubt whether the law does very much good. Man in his supposed perfection at the beginning of his career could not, or at least

did not, obey one law; from that day to the present he has continued violating both civil and moral laws, and I suppose will persist in doing so until the end of this age; but I know of nothing to suggest as an improvement or a substitute for our present legal system.

There is no doubt that in his evolution man has made wonderful advancing strides, but his laws are not perfect and never will be until man becomes a perfect being,—and then he will not need any laws!

One proposition has been stated which I am sure will appeal to everyone present, i. e., that people who are able to pay the physician should do so cheerfully; but there are some among this class who are so narrow-minded that they evidently think the doctor should never be paid! In fact, nearly everybody seems to be of the same opinion, and as a consequence the doctor is usually the last one to be paid. Just at this point I am reminded of a joke which may bear relation: A certain judge in opening his court one morning, asked if any of the jurors present had excuses, and about five or six came forward waiting to be excused. The judge was very angry and lectured them severely for not having more patriotism. Finally he said to the first one who desired to be excused, "I want to know your excuse, but wish to say now that it will have to be an awfully good one if you get off." The man replied, "Well, judge, all the excuse I have is that my doctor is going away on his vacation and I want to meet him at the train to pay him \$10.00 that I owe him!" The judge "threw up both hands" and said, "you are not only excused, but discharged from further service in this court, because we do not want such cheerful liars on the jury!"

The time of the physician of any promi-

nence is usually fully occupied, and as a consequence he gives less attention to business methods than he should. It would be better for him if he had less patients and could make larger collections. As a rule the doctor is a poor business man; patients insist upon paying his bills last, and he naturally acquires a similar habit, i. e., he is slow in paying his accounts, and quite properly becomes angered when criticised therefor. He is slow pay because the public has made him so, and the public has nobody to blame but themselves. If patients would pay the doctor promptly, as they do their grocer, drygoods merchant, etc., it would not be necessary for the doctor to delay payment of his bills.

I am a thorough believer in "team work" and have several physicians associated with me. We pay our accounts promptly, and expect the payment of our bills with equal promptness. And I want to say that I collect from the patient for services performed by our laboratory men, and settle with them when the work is done. Not infrequently I collect all the fees myself, out of which amount I pay the anesthetist, the röntgenologist, the biological worker, and my assistants; and believe I would be derelict in my duty if I did otherwise. If I have a case with a medical side (which most of them have) I do my best to get the patient to pay the consulting physician at the time his call is made.

The best results can be secured by co-operative work; this is one of the general laws of nature. It is noted in the terrestrial bodies, in plant and animal life, etc. What would become of our own little earth were it not for the cooperative influence of the various other and larger planets? It would collide with some of the greater spheres and be dashed into millions of fragments.

in the cerebrum, cerebellum or the spinal cord. As we are dealing only with the paralysis we shall consider only such cases whose multipolar cells, located in the gray matter of the anterior horns of the spinal cord, were affected. If these cells escaped the attack of the virus altogether, of course there would be no paralysis of the extremities. If these cells were attacked and the resulting reparative process was adequate, complete recovery could be expected. If these cells were attacked, more or less destruction took place, and fibrous material took the place of the destroyed cells, then paralysis would be unavoidable.

Every multipolar ganglion cell has one main axis cylinder, the axone or nerve fibre which supplies its particular muscle. Besides this main axone there are other fibres, the collaterals, which, after leaving the gray matter of the cord send branches upward and downward to communicate with the multipolar motor cells at varying levels of the cord. Under ordinary circumstances these collateral fibres secure harmony of action between various sets of muscles called upon to act in unison. When a certain motor cell is destroyed, impulses may nevertheless be generated in cells of a higher and a lower level of the cord and be transmitted to the particular set of muscles involved. As a collateral circulation of the blood is established after the main trunk is ligated, in a similar manner collateral nerve transmission is secured after injury to any of the ganglion cells. These ganglion cells are both the cause of the generation of motor impulses, and also because of their connection with the sympathetic system, the trophic centres for the nerve and muscle which they supply. .

Whenever a nerve fibre is cut off from its trophic centre, that nerve and muscle under-

goes a degenerative process. Nerve fibres are no exception to the general laws of regeneration. When cells have been destroyed, collateral branches are made active or nerve regeneration takes place. There is no reason why a case of paralysis should not recover after a year or more has passed since its inception.

One thing stands out rather pre-eminently and that is: All of the pathological changes present, from the partial to complete destruction of ganglion cells, degeneration of nerve fibres, paralysis and atrophy of certain muscles, the cold and flabby extremities are the direct result of loss of circulation. Tissue starvation is a simple yet expressive term for this condition.

How to Feed and Regenerate the Involved Tissue.—Capillary spasm must be overcome. Can this be accomplished with massage? If the patient is a young child without muscle or adipose tissue development, it is at once apparent that manipulating skin and bone does not adequately improve the circulation. The application of external heat, moist or dry, penetrates only three to five millimeters. If the external heat is kept on long enough the entire blood stream is heated, all of the capillaries are dilated and the object of local heat application is defeated. Passive motion may be dismissed without comment.

Each one of the measures considered is entitled to a certain tho slight share of credit, the results of all these measures have been inadequate. Electricity in the form of the faradic, galvanic, static or sinusoidal current is for the time being not only contraindicated, but it may be productive of more harm than good. When a tissue is suffering from malnutrition, it does not seem rational therapy to compel that starved tissue to perform increased

2. An intense proliferation or exudation of cells (concerning the origin of many of which there is a difference of opinion) limited almost entirely to those parts of the central nervous system most freely and generously supplied with blood, namely, the neighborhood of the rich capillary net work of the gray matter of the cord and to the well vascularized regions of the brain stem and cord.

3. Round cell infiltration of the soft meninges more marked in the lower part of the cord and on its anterior aspect, but extending in some cases to their intracranial membranes.

4. Retrograde changes in those nerve cells and nerve fibres which are intimately involved in the areas of inflammation. The examination of cases which have died many months or years after the disease has run its course shows that the results of inflammation here are similar to those in other tissue. In some parts resolution has taken place with the loss of a few or no ganglion cells; in other parts fibrosis has led to deformities of the gray matter and to complete loss of its cellular elements; in other cases the necrosis may have been sufficient to produce actual cavities in the cord." (Osler Vol. VII, p. 261).

We have here a pathological tissue showing nothing more nor less than the usual results of inflammation in any region and from any cause. The original virus has, as far as we can see, left no trace of its former presence.

We are well aware of the fact that some cases of poliomyelitis have recovered without ever having had the paralytic stage; still others have recovered from the paralysis at the close of one or more years after its inception. Nevertheless, in all of these cases the same original virus was the cause of the disease.

The question arises: Is the virus *per se* the cause of the paralysis? It can not be, since cases of poliomyelitis have existed without producing the paralysis. We are now forced to the only and logical conclu-

sion that the virus is responsible for the inflammation,—the result of the inflammation being the paralysis. That theory is perfectly tenable if we can be brought to the realization that the inflammation was not a pathological state, but a physiological process.

"Inflammation is a complicated vascular and cellular response, which follows almost immediately upon the injury and is adapted by bringing much blood to the spot and pouring out its elements upon the injured tissues, to prevent the extension of the injury, holding in check the injurious agent, or even destroy it. Through the agency of some of the cells which are brought in, and in other more purely mechanical ways, it is also important in cleaning away the debris of injured or dead tissue and preparing the way for the process of repair." (W. C. MacCallum in *Text Book on Pathology*, 1916, p. 128).

The fact that it did not completely repair the diseased condition simply shows that the inflammatory process was inadequate. No matter how severe the inflammation may have been at the time, it was inadequate. The inflammatory process did the best it could under the circumstances. It would have been better if the inflammation had continued until every vestige of intercellular substance and fibrous material had been reabsorbed. But since nature abhors a vacuum, and since some of the cellular element was destroyed, it was necessary to replace the loss with the least obnoxious material possible, namely, a fibrosis. The pathological picture is the end process of an inadequate attempt at repair.

Let us now see why some cases of poliomyelitis never show any symptoms of the paralysis and why some cases of paralysis have completely recovered, not with treatment, but, practically without treatment.

It has been shown that the virus may involve certain nerve structures located either

MEASURED ACQUIREMENTS AND MEASURED INHERITANCE.

BY

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The Binet system sets a standard of mental development which represents normal-mindedness in a five-year-old child. It also sets another and a higher standard for a six-year-old child, another and still higher standard for a seven-year-old, and so on. In other words, it recognizes the fact that mental power increases in the child from year to year. If a child fails to meet the standard of normal-mindedness for his age, he is feeble-minded or defective in some degree.

The law also recognizes the same thing in a little different form. A man is not considered to have reached that stage of mental development which will entitle him to vote until he is twenty-one. He cannot be a member of Congress until he is twenty-five, cannot be a senator until he is thirty, and cannot be president until he is thirty-five. Up to the present, no man as young as forty has been elected to the presidency, and it is doubtful if the public would consent to elect one as young as that.

The development in mental power here involved does not depend simply on the years. If a ten-year-old should go to sleep for twenty years and wake up at the age of thirty, he would have only the mental development of a ten-year-old at the end of that time, and a test at that time would show him to be feeble-minded. The reason is that he would lack the twenty years of mental exercise which produces mental development. It is the quantity of work which produces the mental development, and the years simply assume the normal amount of work per year.

The trotting power of trotting horses also develops from year to year. While there is no recognized standard for the normal development, still we can reach the matter in another way by comparing the extreme speed attained by horses of different ages.

CHAMPION TROTTING RECORDS.

END OF 1916.

	One Mile.
One-year-old	2:15¾
Two-year-old	2:04¾
Three-year-old	2:03½
Four-year-old	2:02
Five and over	1:58¾

Officially, a five-year-old is considered a "full-aged" horse, and there is no classification for horses older than five. Capability of increasing speed, however, continues to a much higher age as is evidenced by the fact that the champion Goldsmith Maid did not reach her extreme speed until she was seventeen. But this increase in trotting speed year by year does not continue unless the horse is continually trained. If there is any let up in training which is more than temporary, the horse immediately loses in trotting power. It is the work which produces the result. It is impossible to make a fast trotter out of a horse by simply feeding him.

Early in their proceedings, the Holstein-Friesian Association established a ten-day standard for milk production as follows: •

HOLSTEIN-FRIESIAN STANDARD.

TEN-DAY MILK PRODUCTION.

Two-year-old	354 lbs.
Three-year-old	432 lbs.
Four-year-old	511 lbs.
Five and over	589 lbs.

A five-year-old cow is called a "full-aged" cow, but as a matter of fact, actual increase in milk production continues up to some

point beyond six years of age. Here also the increased power of producing milk clearly comes from the continuous work involved in milk production. While there is no direct evidence on the point, it is inconceivable that a cow which produced her first calf at the age of five would produce as much milk as if she had had a calf each year since she was two years old.

Human beings are born with widely different inherited mental power. Some men are born with a mental power which enables them to become great inventors, great authors, great statesmen or great executives. Others are born feeble-minded and cannot possibly perform great mental labors. Some horses are born with capabilities which enable them to become two-minute trotters, while other horses are incapable of trotting a mile in three minutes, no matter how much they are trained. Some cows are capable of producing more than a hundred pounds of milk per day for many days in succession, while other cows are incapable of producing half that much under any conditions.

These two sets of facts may be linked together and a comparison between them will show that the second set is dependent upon the first set. What an animal inherits in power capabilities is measured by the development which the ancestors acquired by work before reproducing. This cannot be made clear by anything so superficial as a mere investigation of the parents of an unusual animal. To get anything approaching accuracy, the investigation must cover the grandparents, and preferably the great-grandparents. To get a full understanding the investigation must extend still further, but we will here consider only the main features.

If the mental development of the parents

is below the standard for parents when the child is conceived, then the child will be born subnormal or feeble-minded, depending upon how much the parents were below that standard at that time. The standard father is about thirty-two years of age when the average child is born, and the standard mother is about twenty-nine at that time. Taking the average of the two, we may say that the standard parent is one whose mental development, at the birth of the child, represents normal-mindedness in a thirty-year-old.

The fact that a person is normal as a person or even supernormal, does not necessarily mean that he is a standard parent. The normal person of twenty is no better as a parent than is a subnormal person of thirty who has the mental development of a twenty-year-old. Neither does the fact that a person is subnormal as a person necessarily mean that he is subnormal as a parent. If a person of fifty is subnormal to the extent of being fifteen years behind the normal for his age, he has the mental development which represents normal-mindedness for a thirty-five-year-old. That is above the standard for parents, and if such a subnormal person becomes a father at fifty he is a superior parent and will have a superior child. On the other hand, if a normal person becomes a parent at twenty, he is subnormal as a parent and will have a subnormal child.

These various statements may be verified by investigating the processes by which our superior and inferior men and women are produced. The superior ones were not produced by parents, grandparents and great-grandparents who were subnormal by reason of being below the standard age for parents at the time of reproducing. Neither were they produced by parents, grandpar-

ents and great-grandparents who were at or near the normal or average age of parents at the time of reproducing. Taking a list of more than five hundred of the great men of the world it was found that the fathers, grandfathers and great-grandfathers reproduced at an average age of over forty years.

Two generations in the male line (from birth of grandfather to birth of grandchild) covering one hundred years, or more, is much less common in normal reproduction than four generations in ninety-nine or less years. Yet, in the pedigrees of eminent men, two generations covering a hundred years or more was found in ten percent. of the cases in which records covering a hundred years could be traced, but no one has ever yet found four generations in that time in the pedigree of an eminent man. It is impossible to produce an intellectually eminent man unless the ancestors for several generations in succession develop their mentality beyond the thirty-year standard for parents.

Our feeble-minded families are produced in the reverse way. They originate in the first instance by parents, grandparents and great-grandparents who were below the standard for parents at the time of reproducing. Primarily and principally they were below the standard for parents by reason of being below the thirty-year mark at age at time of reproducing. Secondly, they were below that standard by reason of the lack of that kind of mental stimulus which causes mental activity and mental development.

That is the story of the origin of the Jukes. Young and indolent Max had a daughter Margaret. Young Margaret was also even older an illegitimate son. This son became a father at fifteen, and the son

of this fifteen-year-old father was the founder of one of the most feeble-minded branches of the Jukes family. Extreme youth and lack of education in parents are characteristic of all the feeble-minded branches of the Jukes. But when some education and later reproduction characterized some branch of the Jukes descent for two or three generations, the members of that branch rose to be respectable and decent members of their communities. The same things may be traced in the same way, in the Kallikaks and the Ishmaels.

The same thing which characterizes the origin of mental power in man is found in the origin of trotting power in horses. The standard sire is a ten-year-old when the average colt is born, and in physical development he is between the sires which the breeders selected for breeding purposes and those horses which were compelled to earn their oats by hard work. Owing to some peculiarities in the practices of breeders of different dates, a true perspective in this matter can be had only by going back to the nineteenth century and tracing the evolution of 2:10 trotters from stock not capable of trotting a mile in three minutes.

At no time during the nineteenth century did any improvement in trotting power come from sires which were below the standard for sires, either by lack of age or by lack of that physical work required to bring about standard development. There are a few isolated cases of developed sires and dams being in the hands of professional breeders, but for the most part the stock which the breeders selected for breeding purposes has long since gone into the discard. The real improvement came thru those horses which were worked on the track or on the road for years before being bred. Two generations of idle brood mares

running free in the open lot was sufficient idleness to be absolutely fatal to the production of 2:10 descendants, no matter to what they might be mated.

The same thing is true in the same way of the milk-producing power of cows. In the Holstein-Friesian breed, the standard dam is 4 years, 3 months and 21 days old when her calf is born. But 1,000 dams found in the pedigrees of the greatest milk producers were not standard dams, or dams below the standard. The 1,000 dams averaged 5 years, 8 months and 18 days, or nearly 33 percent. above the standard. Furthermore, when the investigation was pushed to find the greatest improvement, it was found to be when the dams were more than 70 percent. above the standard. We get improvement in milk production from the offspring of old dams and not from the offspring of young dams. The amount of improvement is directly proportional to the amount of work performed in previous generations.

These things are facts and not theories or opinions. Unfortunately there are pretended scientists who will deny these facts without taking the trouble to ascertain the truth of their statements. Unfortunately also, many of these men occupy positions as instructors in our institutions of learning. Fortunately, however, the facts are facts of record which anyone may verify for himself. And those records may be found in public libraries and in the official publications of breeding associations. In this matter no man is dependent for his information on the dictum of any other man, unless he chooses to be so dependent. He can find the facts for himself. And the way to get that information is to examine the thing itself and not some goose bone. That brand of goose-bone science which consists in exam-

ining the hairs on a guinea pig and the feathers on a hen for the purpose of determining the effect of educating the grandfather has been altogether too popular. It is about time for that form of voodooism and sorcery to be relegated to the limbo of the past.

A PLEA FOR GREATER SIMPLICITY IN DIAGNOSTIC TECHNIC.

BY

HARDEE JOHNSTON, M. D.,
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The god of the machine rules the land, and there is no profession, trade or occupation that does not contribute its individual toll and is not bound by some of its thousands of tentacles.

Our own profession is not spared; and it is of the things that are happening to us now, and unchecked, are certain to follow, that I wish to call your attention.

We, as medical men, know that use means development, that lack of use means atrophy and decay.

The Chinese, during their thousands of years of civilization, have learned some facts that our more modern enlightenment might profitably take a lesson from. The congenitally blind amongst them are taught the trade of professional rubber, or masseur, and it is said that in sensitiveness of touch, interpretation, etc., to our blunted senses, their ability seems simply marvelous. Being from birth robbed of that faculty which we all, probably, hold dearest,—sight, the law of compensation, which is nothing more than the law of use, has given to these sightless ones fingers that all but see, fingers whose nervous mechanism is so fine till they respond to the slightest of

stimuli. I have seen it stated as an anatomical fact, that there is developed in the fingers of these masseurs, nerve cells analogous to the nerve cells of the human cortex, as if they could do independent thinking for themselves.

On the other hand, we are all more or less familiar with the seemingly impossible acuteness of eye, ear and nose possessed by man in his primitive state. The Indians of America, the Bushmen of Australia, the Hottentots of Africa, can all read and interpret the faintest tracings of the trail as readily as we can read an open book. Their ears can catch the sounds of the forest dead to our blunted organisms; their nose is infinitely more delicate than our unused organ, and approaches in acuteness that of the dog.

The high development of these special faculties has resulted entirely from use, primarily and secondarily. Primarily the individual savage from early childhood, like the wild animal, must rely upon his faculties for protection; he must rely upon his faculties for food and sustenance, and this means, use, use, use. Secondarily, the individual savage has inherited sharpened faculties because his parents before him continually used these organs.

Now, how does all this touch us doctors? Very closely, I think. In this era of the multiplicity of instruments of precision,—so called, in this maze of machine-made diagnoses, are we not in danger of allowing those recording instruments with which nature has endowed us, thru lack of use, to become blunted and inactive?

It seems to me that we have made a very poor trade in exchanging the possibilities for development of our natural gifts, the hand, the eye and the ear, for these man-made machines of today. And there is no

doubt about the fact that in part, at least, such an exchange is being made. For the less we rely upon our own unaided senses, the less we use them, the more we see the law of use playing its part, and making them less capable, less active, less reliable.

As you know, it has become fashionable in the cities, not to attempt to make a diagnosis unaided. Among the ultra swells, it is held as simply a mark of boorish ignorance, to begin to form a concept upon any given case or condition, until you have submitted the said patient to an ever-lengthening list of laboratory tests, X-rays, etc. This, to my way of thinking, is simply the height of the ridiculous, from both the standpoint of the patient, as well as that of the doctor.

Do not understand me to mean that I am decrying all the different appliances and tests that form a part of our armamentarium now; not that, for I believe, as an adjunct, used to corroborate that which you unaided, find and think, they have their place and value. But to imagine for one moment that they can take the place of the educated, the cultivated brain, is simply pitiable.

The more we know of most of these tests, the less certain do we feel as to their infallibility. Who is so foolish now as to wait for a positive Widal before beginning to think of typhoid? Who places any particular credence in an early negative Widal? Under ordinary circumstances, the doctor who waits until the malarial organism is demonstrated in the blood before administering quinine, is simply subjecting his patient to unnecessary pain and suffering.

When the different tuberculin reactions were heralded abroad, the inference was that the physical signs of the disease, as elicited through examination of the chest,

would be entirely superseded by these more certain tests. We now know the absurdity of this. During one of my services in the Hillman Hospital, as an experiment, we administered the tuberculin skin test,—Von Pirquet—to the nurses and internes. As well as I remember, about three-fourths of them gave a very positive reaction. They were as healthy a lot as one would wish to see. Even the Wassermann reaction admits of many errors, and is by no means as certain as we once believed.

I can remember my feeling of almost panic when the X-ray first began to be exploited. The reports upon this wonderful instrument were such that one could scarcely see any reason, any good excuse, for continuing in general practice. The machine was not only going to see it all, but was going to cure it all as well. Some years have elapsed since then, and we general practitioners are still in evidence, and I know some X-rays that the dust is settling upon.

I had a funny little personal experience not long ago in which one machine got the worst of it, that may bear repeating. My son, eight years old, had what I believed, an abortive attack of croupous pneumonia. Some weeks later, I had heard him complain momentarily of pain in the side. I asked where, and found that he had pain in the right iliac region, practically over McBurney's point. As night advanced, he began to really suffer, and there was marked rigidity, pain, tenderness, and temperature of 100. I examined his blood and found 12,000 leucocytes. It looked like a classical picture of appendicitis. But just as I had about determined to take him to the hospital, I noticed that the boy sat up for relief. He seemed undoubtedly more comfortable sitting up than lying down. This was not like any inflammatory condition in abdomen, so

I immediately went over his chest, discovering some flatness at base of right lung, with diminished resonance and fremitus.

I took him down town, had an X-ray picture taken, with as beautiful a negative result as one could find. The operator, a personal friend, said that there was certainly no fluid in the pleural cavity. I told him to just follow to my office and I would show him. I put a needle in and drew off five or six ounces—and the boy was well.

This case might well serve to illustrate the two things for which I am contending: the necessity of using your senses and the fallibility of the machine. Had I not noticed the boy's attitude, he stood a good chance of being operated on for appendicitis, which he did not have. Had I believed the X-ray over my own findings, the condition would not have been relieved.

Personally, I know how easy it is to fall under the deadening influence of the machine. Every year after my term of service at our local hospital, where it is routine to have this test and that test performed, all with no trouble to myself,—where there is no necessity or responsibility for an early diagnosis, it takes some little time to adjust myself to the usual conditions of private practice, and I find myself mentally waiting upon such tests before beginning to think.

Gentlemen, we look to the city for elaborations in laboratory findings; we expect from these centers development along the line of specific medication, sera and vaccines. At the same time, and because of the development indicated we can most certainly expect to find a general decadence in ability to interpret and elicit physical signs.

To you, gentlemen, it seems to me, there is a clear call to preserve for the medical profession the art of the physical diag-

nostician and clinician; to make this your peculiar field for development.

Of necessity, you must rely upon your own unaided senses more than your brother of the city. Let this necessity prove your intellectual pleasure and development. Train yourselves to powers of close observation, train your hand and eye and ear. It is not alone the number of cases seen that makes toward valuable experience, but quite as much the manner and thoroughness with which the individual case is observed.

We hear much of specific therapy these days, but I am here to tell you that we see mighty little of it; and in the meantime we have to do the best we can with symptomatic treatment.

Here again, one's individual powers of intelligent observation play the part and spell the difference between successful treatment and the reverse.

We may say we are treating a case of typhoid fever, pneumonia, etc., but it is not wholly true. We are treating an individual sick with one of these infections, exhibiting symptoms peculiar to the infection and to the individual. We must interpret these symptoms and read aright the major symptom in so far as this individual is concerned. And this is important. For it is almost certainly true that the same disease in different individuals, will vary in its major symptom with the varying individual. It is your part to interpret this major symptom and bend your efforts toward combatting its baneful influence.

Already there are indications that the individual reaction to drugs and disease is beginning to be recognized as the paramount factor for the successful doctor, and it is true, gentlemen, that here intelligent, skilled observation is supreme and this is where you particularly should excel.

JAPANESE SUPERSTITION ABOUT SICKNESS.

BY

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In the September (1916) issue of *AMERICAN MEDICINE* is found a very valuable article by R. I. Geare, Washington, D. C., wherein are made some special references to Japanese superstition in regard to the cure of certain diseases. It was with great care and deep interest I read the article, being greatly impressed by the writer's profound knowledge and at the same time perceiving that a very great amount of hard labor had been bestowed upon the gathering of material for this article. But among the many views set forth by the writer, I regret to say that I have found some few errors and would like to offer some explanations in regard to these. Further I should like to append some remarks on forms of Japanese superstition, not touched upon by the writer.

The advance of medical science and general increase of physicians thruout Japan have very largely done away with superstition with regard to the treatment of fatal diseases among most classes of society. But nevertheless among certain of the lower classes very ridiculous forms of superstition are still in existence.

For instance, as the writer rightly remarks, there is a superstition among some classes that the skin of a snake has healing powers, altho I have never heard of the belief that it has any efficacy for troubles of the abdomen, however the skin of a snake is reported to be a cure for all pains in the head. In my early childhood I have seen children of the lower classes make headbands out of snakes' skins. That, however, was at least twenty years ago. At the present time at the sick-beds of even

the lowest classes, I have neither seen nor heard of snakes' skins being used.

In the course of his article the writer says, "The exorcising of disease by a host of gods and goddesses is still credited in

cure certain diseases is now very rare in Japan. But the tradition still lives among some classes that evil spirits of sickness (smallpox) were frightened away by the bravery of General Minamoto Tametomo, of very ancient fame. They also believe that if they paint *his house* on a small piece of red paper and paste this on the door-posts of their own houses, they can prevent the visit of the spirits of disease. Even now in the very rural districts of Japan, one may see houses with these charms pasted on the door-posts. But as a rule, when people are seized with smallpox, most of them send for the physician and receive his treatment, at the same time praying to Tametomo, believing they will thus be cured. They wish to invite the presence of Tametomo into their homes to intimidate the spirits (of smallpox), but it is mainly only with the idea of preventing the disease that they make an appeal to Tametomo.

In every town there are various shrines, but among these are some containing the



FIG. 1. The inscription on wrapping of the protection tag.

some parts of China, Japan, etc.," if instead of "in some parts," he had said, "among certain classes," it would have been quite true.

In regard to Hindoo goddesses having "personal power over smallpox," the belief that certain gods have peculiar powers to



FIG. 2. The protection tag itself.

god who especially has the guardianship of oneself, and gods of this kind may be called tutelary deities.

The character of Japanese deities is entirely different from that of most gods of foreign lands, as all were formerly in reality great heroes. The shrines were built to pre-

serve forever the memory of those who had shown great loyalty to their country. Thus the spot on which the shrine is built is either the place of his birth or death, or some such place which the people especially wish to remember in connection with the hero. Therefore there are often many places in the country where the same god is worshipped. Accordingly the various cities, towns, and villages select their own special guardian-god, and every spring and autumn festivities are held in his honor. At such a time the people of that whole district go to worship and to pray for peace and happiness for themselves and their family.

Then, if there is sickness in their homes, they pray for the recovery of the sick one, without any thought as to whom the god may be. And if the sickness at such a time is critical, they take water from the shrine well and, even on cold winter nights, pour it over their bodies in order to purify themselves, and having thus purified themselves they pray to the god for recovery of the sick ones. But this is only a religious ceremony and not a form of superstition.

In the shrine is a bell, hanging high up over the entrance, with a long cord fastened to it. This, according to the writer of the aforementioned article, is used "for calling the attention of the deities." It may be thus used in Java, but in Japan, where in ancient times they used certain musical instruments in the worship of the gods, they now, instead of a confusion of instruments, only ring this bell.

Altho they pray for the recovery of the sick in the above mentioned way, they do not leave his cure entirely to the gods, but also, in addition, call in the physician. The prayers are rather believed to bring peace of mind to the patient as well as to themselves.

The charge which the writer makes on page 649 (Sept.) about the great lack of knowledge of anatomy and physiology on the part of many physicians in this country, was completely new to me. Possibly the writer had been reading about the ancient so-called Chinese doctor. About 50 years ago there were Chinese and Dutch doctors in Japan. In ancient times Japan got her medical science from China and doctors who learned this science were called *kampo*i (Chinese doctor). Later Dutch doctors came to Nagasaki, and Japan had her first introduction to Western medical science. Those who practiced this science were called *rampo*i (Dutch doctor). But even the Chinese doctors were not so ignorant as infers the article, and furthermore, in Japan of today the *kampo*i are no longer found. There surely are no physicians here now who have such crazy notions as indicated in the article referred to.

But a yet greater mistake is made by the writer on page 648 (Sept.) in regard to the Shinto-priest. I am greatly at a loss to know whence Dr. Geare got that mistaken information, because the person seen in the picture is not a priest at all. He is a seller of love letters from ancient Kyoto. His cap, dress and straw leggings, being not at all a special costume, was the dress of the ordinary Japanese in those days. That which he holds in his right hand is a love letter and that which he carries over his left shoulder is the branch of a plum tree with a number of love letters tied to it. The young men and women of that period used to buy such letters for amusement. But probably because his dress looks a little like that of the present-day priest, the doctor has imagined him selling "prayer charms of magic potency." But according to the superstition of modern Japan, the Shinto-priest puts water into

a bowl, calls it god-water and gives it to the sick to drink. There are also numberless cases in which they stroke the stone figure called Koma Dog and then stroke the eyes of those who are suffering from eye-disease.

In regard to the many forms of superstition and especially those pertaining to the cure of diseases, the responsibility rests entirely with Shinto-priests of low character, who create such superstitions in behalf of selfish interests.

Many Japanese shrines also offer *protection-tags* for sale, and it is believed that these prevent robbery, fire, and sickness. In many homes these tags are pasted to the ceiling or walls or are sewed into their garments, or as can be seen in the picture on page 648 they are put into a bag, worn around the neck.

But the government is passing stringent laws against the practice of quackery and every summer thruout the entire country many lectures are given on hygiene, and by these means superstition in regard to the cure of disease is gradually decreasing. Consequently from the standpoint of medical science and psychology the material for such study cannot now be found to any great extent.

A BRIEF STUDY OF THE POISONOUS INSECTS.

BY

R. I. GEARE,
Washington, D. C.

The extent to which insect poison affects man depends largely on the susceptibility of the individual, and its effect is more or less proportionate to his constitution and the general condition of his health at the time. There is usually connected with the bite or sting of most venomous insects a poisonous

secretion, which may come from distant poison-glands, or from the ordinary salivary glands more or less modified.

Among the tarantulas, bees, wasps, etc., it is believed that the nature of their poison is not very unlike that of snakes, for it is well known that the results, as well as the antidotes employed, are somewhat similar.

In the less venomous insects the poison appears to consist of some kind of acid, which requires a non-poisonous base for its

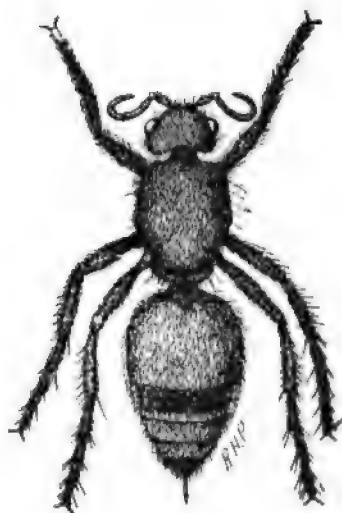


FIG. 1. A cow-killer, or wingless wasp, *Sphærophthalma similima*, female. (After Lugger).

antidote, such as the alkalies (magnesia or lime), and their carbonates,—ammonia, etc., but in the majority of such cases the effect is simply due to mechanical irritation. No poison is actually secreted, altho the insect may be popularly counted among the poisonous ones.

It is a curious fact that in all of the stinging insects (except perhaps the African tsetse-fly, mention of which will be made a little further on) only the female inflicts the wound, the sting being in reality a modified ovipositor. The same holds good with the stinging flies, which actually bite with

their mouths. Other insects pierce the flesh with their beaks, and in such cases both sexes are equally guilty of contributing to man's annoyance.

Of all venomous insects, certain representatives of the *Hymenoptera* are most aggres-



FIG. 2. Fly of the Screw-worm.

sive, such as the *Terebrantia*, which are parasitic and use their sting as an ovipositor, by means of which they insert their eggs into various kinds of larvae. Many of the ants possess stings with poison-glands, while others inflict poisonous bites with their mandibles, injecting formic acid into the wounds. The tropical ants are especially troublesome.

The cow-killers (*Mutillidae*), another very poisonous group, are usually of a bril-

liant red color, and their sting produces violent inflammation, fever, and much lameness. They are credited with having enough virulence in their poison to kill animals as large as cows. Hence the name.

The digger wasps (*Sphegidae*) have a poisonous sting. The mother wasp uses her sting in procuring food for her young, selecting some hapless spider, worm or beetle, which she stings just enough to paralyze it. She then carries it to a cell already prepared in the ground, or elsewhere, deposits an egg on or near it, and closes up the cell. The egg in time hatches, and the wasp larva feeds on the living food, which was thus provided by the considerate mother.

The large digger wasp (*Stizus grandis*) stores its nest with cicadas, and it is said that the cries of agony emanating from the latter whilst being stung, are very loud and piercing. Two or three stings inflicted at one time by this wasp would even endanger a man's life, and would be about equal in severity to the bite of a scorpion.

Another large digger wasp (*Pepsis formosa*) is incidentally beneficial to man by stinging the dreaded tarantula, whose bite will be considered later. In Texas it is known as the "tarantula killer." The mud daubers, paper-wasps and yellow-jackets are other groups of the *Hymenoptera*, whose

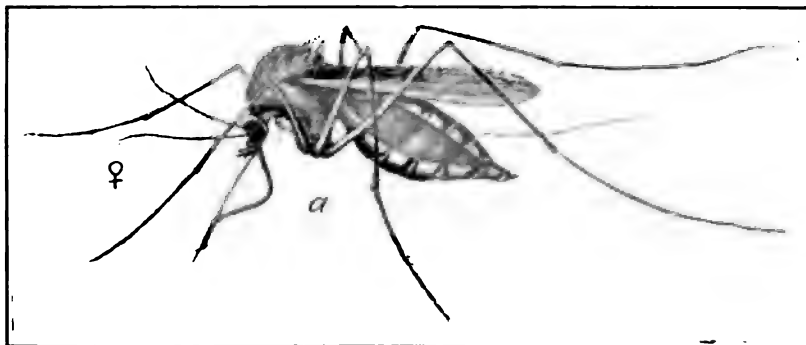


FIG. 3. Mosquito. *Culex pipiens* Linné. Female.

sting is more or less poisonous and very painful.

Among the bees (*Apidae*) only the "workers" have stings, and that of the carpenter bee, which is often mistaken for a bumble bee, is especially painful.

Probably the only really poisonous beetles (*Coleoptera*) are the vesicants or blister-producing insects, belonging to the family *Meloidae*. In this class is the Spanish fly, whose sting possesses chemical properties

qualities. This is especially true of the spinners, and the slug-worms. In the first of these the source of irritation is a powder secreted from either the surface or the hairs, while in the latter there seems to be present a secreted poison which they can inject thru the spines. Some European caterpillars secrete an acid juice through their skin, which produces an irritation that results in a terrible itching and burning sensation; while in Brazil there is a caterpillar whose



FIG. 4. Tsetse-fly. (Much enlarged).

and which may under certain conditions blister or poison persons who handle them carelessly.

It is quite comforting to know that none of the butterflies or moths (*Lepidoptera*), so many of which are beloved for their beauty, are poisonous, at any rate not in the mature, or winged, state; but it is well known that some of the caterpillars or larvae possess both urticating and poisonous

segments are armed with eight long, bright orange-yellow spines.

The two-winged flies (*Diptera*) are capable of producing a troublesome irritation, as we all know from our experience with the common house-fly. They are not poisonous, however, altho they are known to carry disease germs on their feet or body.

In the southern states the screw-worm, which is merely the larva of a fly known as

Lucilia macellaria, is much dreaded. It can injure and even kill animals as large as horses, and it is claimed by many that human beings are occasionally among their victims. The female frequently deposits her eggs, or young maggots, in people's nostrils,

who suffer from nasal catarrh or are subject to nose-bleeding, to sleep out of doors in that region.

Among the *Diptera*, none is so harmful as the African tsetse-fly. This pest has a little poison-gland at the base of its mouth, not larger than a mustard seed, and yet infinitely more deadly to horses, cows and dogs than the venom of the rattlesnake! After alighting on its victim, it fills with blood in about half a minute, which gives it a swollen appearance, like a diminutive balloon. A full account of the ravages caused by this fly may be found in the report of Surgeon-Major David Bruce, printed in 1897 by Harrison and Sons, St. Martin's Lane, London, England; or in E. E. Austen's monograph of the tsetse-flies, published in London in 1903, and sold by Longmans and Company, 39 Paternoster Row, London, E. C.

The black flies, or buffalo gnats, are fearfully tormenting to the fishermen in Labrador, while along the Mississippi region they appear in swarms nearly every spring, causing heavy loss among domestic animals.

To speak at length of the mosquitoes would be superfluous, and it seems sufficient to say here that furious attacks of the female members of the *Culicidae* have caused the rout of armies and the desertion of whole towns. The irritation and subsequent swelling which their bite causes is not produced simply by the tearing of the mouth-parts in the skin of the victim, but also by a poisonous saliva which is injected.

The discomfort caused by fleas (*Aphaniptera*), or wingless flies, is known to every one. The chief offender is perhaps the "jigger," which is especially numerous in sandy places along rivers in South America. Both sexes imbibe blood freely, but it is the female which delights in penetrating under the nails, where she deposits her eggs, the young

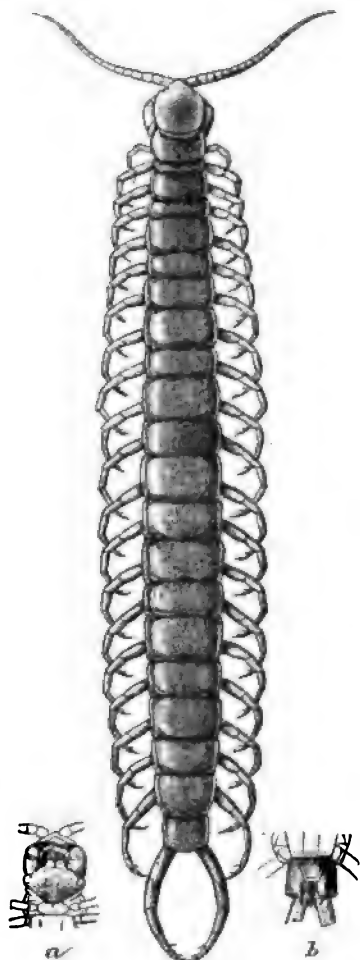


FIG. 5. Centipede.

Scolopendra Castaneiceps. (a) Under side of head, showing fangs. (b) Under side of last segment. (After Wood).

which sometimes results in the destruction of the soft palate; and in one case, the tissue covering the cervical vertebrae had been wholly destroyed and the vertebrae actually exposed. It is unwise therefore for persons

hatching out and feeding upon the swollen body of the mother-fly until they are fully grown, when they effect their escape.

Among the half-wing bugs (*Heteroptera*) there are numerous species capable of inflicting severe pain both on man and animals. When these bugs insert their beak into the flesh, a drop of fluid, which is an acid poison, is at the same time discharged from the salivary glands. Conspicuous among

have a more or less poisonous bite, the famous so-called "kissing-bug" coming under this head, as well as the European bugs, which are often seen in the country lanes moving very deliberately and making a long pause between each step. In this group is also the blood-sucking conenose, or big bed-bug. The swellings which these insects produce fester quickly, occasioning much pain and itching. Another of the kissing-bugs,

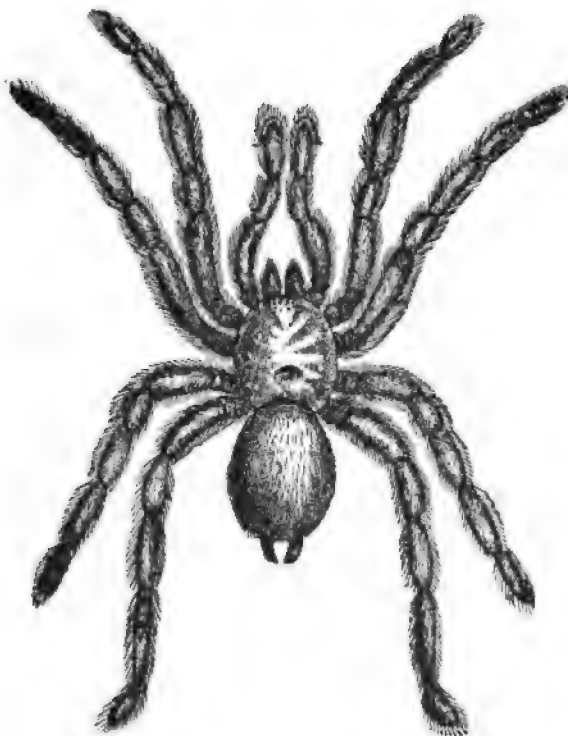


FIG. 6. American Tarantula, or Bird Spider.
Mygale hentzii.

From *American Entomologist*.

them are the water-scorpions (*Napidae*), which bite freely and inflict severe pain. The giant water-bugs, too, are very troublesome. One species, commonly called the electric-bug, is often seen around electric lights. Its bite is very injurious to young fishes, and its puncture painful, altho it very rarely wounds human beings.

Nearly all of the pirate-bugs (*Reduviidae*)

known as the wheel-bug (*Prionidus cristatus*) also produces violent inflammation by its punctures, and the bitten hand or arm are often rendered useless for several days.

The bloodthirstiness of the *Cimicidae*, commonly known as bed-bugs, is familiar to almost everybody, and yet, gourmands, tho they be, they exist for a long time without food. A female of this family was once

put into a tight fitting box, and after six months was found to be not only alive but was surrounded by a brood of young ones, which were transparent as glass, presumably from lack of blood!

The wound inflicted by the centipede (*Chilopoda*) is perhaps as severe as that of any insect. Its poison-glands are in the base of its first pair of legs. The fangs are very strong, and the bite is dangerous. The most formidable of these insects belong to

can tarantula, is dreaded because of its poisonous bites. These spiders catch birds and suck their blood. The species to which the name was first given is a native of Surinam and other parts of tropical South America. They live in holes or crevices, and do not spin a net, but make tubular nests in which they lurk during the day, seeking their prey by night. Small birds have been known to die in a few seconds after being bitten. Some of the web-spinning spiders

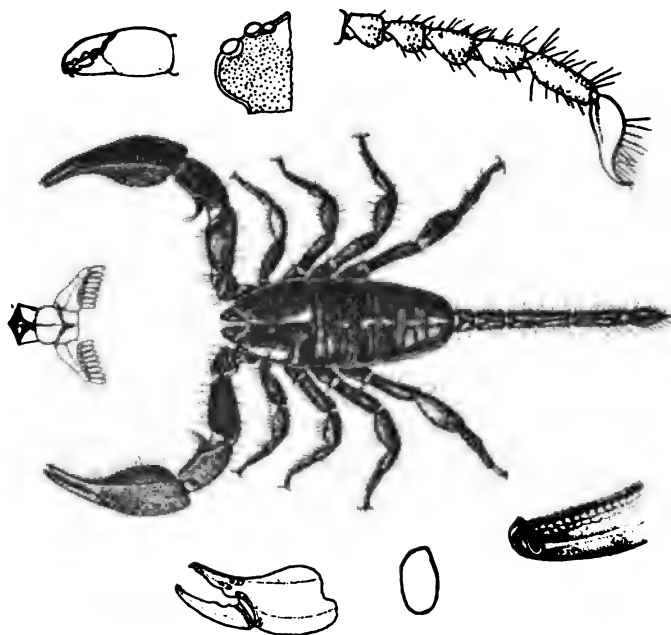


FIG. 7. Scorpion.

Buthus Carolinianus Beauvois.

the family *Scolopendridae*, some of which are nearly a foot long.

Some spiders and scorpions (*Arachnida*) can inflict a bite which will endanger a man's life. In this class is included a number of parasitic spiders, most of which feed on animal matter and kill their prey by means of peculiar organs situated either on the anterior or posterior end of their bodies.

In tropical and some sub-tropical countries, as well as in the southwestern part of the United States, the bird-spider, or Ameri-

make webs strong enough to entangle small birds, which thus become their prey.

The tarantula proper (*Lycosa tarantula*) is a native of Italy, but closely allied species are found thruout Europe, and the so-called tarantulas of Texas and adjoining States are really large species of *Mygale*, or bird-spiders. The bite of the tarantula was believed to produce a kind of frenzy in human beings called "tarantism," the nervous actions of whose victims are supposed to be imitated in the wild Italian dance known as

the "tarantella." It has been stated that sufferers from the tarantula's bite cannot bear to look at anything blue or black, altho red and green colors seem to be pleasing to them.

Scorpions' venom is dangerous in proportion to their size, age, and condition of irritation, temperature, etc. It is said that amputation was often resorted to in order to save the lives of English soldiers in Egypt who had been bitten by them. The sting of some of the South American species causes violent fever, numbness, tumors on the tongue, and dimness of sight. One authority, writing of their habits, states that they leave their retreats at dusk, running with tail raised over their back and pointing forward. Their food consists chiefly of spiders and large insects, which they grab with their claws and kill with their sting. During the day they hide under stones, in rotten wood and dark places. They are fond of warmth, and often enter houses and hide in beds, clothing, shoes, etc. The pain caused by their sting is quickly moderated by the application of ammonia, or even tobacco ashes, while a small dose of ipecacuanha will generally overcome the faintness. The effect of the sting diminishes in violence with repetition, and if stung often enough, one may become immune, it is said.

There is a group of spider-like insects, called *Galeodes*, which in southern Russia are said to jump on sleeping camels and poison them. The Kalmucks believe that the only remedy is the milk of a woman in her first confinement; or else the heart or lung of a black dog or cat. The best known species of this class in America is *Solpuga americana*, which is usually restricted to sandy deserts, where it digs pits, removing the debris by means of its powerful mandibles and stiff hairs.

COLDS—THEIR CAUSE AND CURE.

BY

IRVING WILSON VOORHEES, M. S., M. D.,
New York City.

Every winter and spring humanity is made wretched by the prevalence of acute diseases of the respiratory tract, or in common parlance, "Everybody seems to be having a cold just now." But aside from this comment very little effectual effort is made to understand how colds can be prevented, or how they can be quickly aborted when once under way. The medical profession is now agreed that a cold is something more than an annoyance. In fact it is a real danger, because it is usually what is known as "a mixed infection," that is instead of being caused by one type of germ, a number of microorganisms are usually found together and their "team work" is so perfect that they often resist all ordinary simple remedies. Associated with the "cold" germ, or micrococcus catarrhalis, there is not infrequently the germ of pneumonia or tuberculosis. Once the soil is prepared by what seems to be an infection of no real significance, there is no telling what complications may ensue. Because a cold is an acute infectious disease it should never be neglected. If its tendency to infect were widely understood it would be one of the reportable conditions along with scarlet fever and diphtheria, and no physician could pass it by carelessly without laying himself open to severe criticism and a fine for neglecting a public duty.

Because most people seem to recover from a cold with no more apparent aftermath than unpleasant memories, it is looked upon as a necessity of modern life, or at least as an unkind visitation of fate. Nevertheless it is only too often the precursor of a prolonged illness and, ultimately, of a fatal is-

sue. The determined effort of the Board of Health of New York City to prevent droplet infection in public conveyances ought to be heartily supported. It may be an impossible task but it is surely worth trying. Perpetual warfare ought to be waged against those who wilfully cough and sneeze "into the open" without protecting the face with a handkerchief. It is common practice to go thru the paroxysm first and to produce the handkerchief afterwards, and it is perfectly surprising to see people do this whose every gesture would indicate that in all other respects they had been perfectly brought up. Ignorance must be the cause of this regrettable breach of the first law of life; namely, do not make yourself a nuisance to those who have to breathe the same atmosphere as you do. A campaign against ignorance is always being waged, but in the present instance it has been very unsuccessfully prosecuted. Spitting on the floor, while disgusting, is in reality much less dangerous to public health than this sputtering of fresh germ-laden spray into the airways of defenceless passengers. Coughing or sneezing into the strong sunlight gives one a very vivid impression of how far liquid particles can be projected even tho the word bacteria may be unknown to him. During every moment of our earthly existence we are constantly inhaling and exhaling. Many thousands of cubic feet of air are thus taken in and given out during each day, and this goes on at night just as well as during our waking period. Imagine, therefore, what takes place when a person with an acute nasal infection, for instance, enters a crowded hall. The sudden change of temperature from outdoors to indoors sets up a change in the rate and amount of blood passing thru the nasal blood vessels supplying the mucous membrane lining the nose.

There is a tickling irritating sensation, and an uncontrollable desire to get rid of something. That something is an increased amount of mucus which is loaded with bacteria and the products of inflammation. When the disease germs gain access to the mucous membrane, they begin at once to multiply enormously because the two conditions necessary for their propagation are right, namely heat or rather warmth and moisture. The first effect of these intruders is to cause the mucous membrane to tighten and to become dry. This dryness is the warning sign and should never be forgotten or neglected. It is very often felt in the back of the mouth and throat in that respiratory cesspool known as the naso-pharynx which lies behind the nose and above the soft palate. Following this feeling there is a reaction, the blood vessels instead of contracting further, dilate and pour into the tiny mucous glands the substances they need to manufacture secretion. From this time on these glands are very active and secrete and throw out several ounces of fluid in the twenty-four hours. This fluid is acrid and irritates the nasal nerves which in turn set up the reflex act known as coughing or sneezing. That is the *modus operandi* by which hundreds of persons sitting in an audience, breathing and re-breathing the same air may become infected.

It is coming to be recognized more and more that many if not most of the acute infectious diseases are air-borne. This must be true for they first manifest themselves on the mucous membrane of the respiratory tract. Scarlet fever, measles, diphtheria and many other like infections of childhood first manifest themselves in the nose and throat. Only recently it has been abundantly proven that infantile paralysis is caused by a very minute organism recoverable from cultures

of the nose and throat, and transmissible by smearing the discharge from the mucous membrane of an infected animal's nose into that of a previously healthy animal. Infantile paralysis is undoubtedly an insidious disease caused by an organism infinitely small, so small that it cannot be trapped by the filters now in use which serve very well for all other purposes, which is carried in the air, finds lodgment on the nasal mucous membrane and quickly is absorbed thru this porous organ into the general system manifesting there its first active symptoms.

If it were possible to isolate every person having a cold and thus prevent him from polluting the atmosphere the condition would in a relatively short time become as rare as smallpox. Since it is not possible, what can be done to limit the infection and to prevent the enormous contagion now prevalent?

First we can teach a certain percentage of humanity how to cough and blow the nose. There are some who, of course, will never pay any attention unless forced to do so by the consistent application of some wise punishment. The more intelligent element can be taught how all infections are spread, and can be depended on to exercise the same kind of care that surgeons and nurses employ in the operating room in preventing the transmission of germs from one patient to another. All discharges should be burned and not handled by innocent persons who know nothing of the ways of transmission. Inexpensive handkerchiefs should be used and promptly destroyed, not washed in public laundries. The patient should be taught that his hands and clothing catch the discharge and may transmit it to others. Close contact (kissing, petting, etc.) should be interdicted.

A very important thing is to secure

prompt and efficient treatment at the very beginning. In going over my personal records, I find that fully 95% of all patients coming for treatment do not appear before the third or fifth day. The infection is by that time pretty thoroly established and constitutional symptoms of headache, chilly sensations, muscular pains, fatigue, etc. are in evidence. Very seldom has any effectual effort been made to check the trouble at its source in the nose or throat, while strenuous measures have often been adopted toward constitutional attack. A purgative, hot mustard footbaths, quinine and whiskey, aspirin, Turkish bath, some concoction prescribed by an obliging druggist, and many things based on superstition and ignorance have all been tried before consulting the nose and throat specialist who can see just where the trouble lies and treat it accordingly. The medical profession at large is somewhat to blame also; for the medication prescribed is often a relic of the old days before the invention of the nasal speculum and headlight, when it was considered good practice to put drugs into the stomach instead of at the site of trouble. Direct application of antiseptic agents to the original focus of infection in the nose, throat or lungs is now possible by refined methods which do not distress or annoy the patient unduly, and which are efficient in 90% of all cases.

In the *N. Y. Times* for January 26th, 1917, there appeared a very sane and sensible editorial article entitled "Who Doctors Himself is Unwise." This gives the lay point of view but shows at the same time the unwisdom of self-drugging. The writer says that the simple maladies so-called are the ones that are ignored in the beginning at the very time when prompt and efficient treatment would do most to blot them out

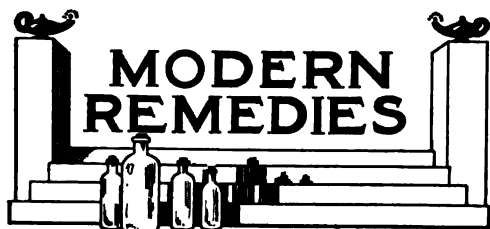
quickly. Or if not neglected completely popular remedies are used concerning which there is more need of "discrimination than is commonly possessed, and not infrequently treatment that is commendable in itself becomes quite contrary unless incidental risks are understood and guarded against. * * * Powerful drugs are taken or administered by laymen who know some of their effects, but are quite ignorant of the perils that accompany their benefits. * * * Especially should the untrained abstain from dosing themselves with any of the new synthetic drugs. Even the most innocent of the lot need the sort of watching that only the physician can give, and the chances are that when they do no harm in inexperienced hands they do no good. Meanwhile, precious time is wasted and cure is made difficult."

When local treatment is instituted at home it usually consists in inhalations. These while of undoubted occasional value are not sufficiently concentrated to be of bactericidal use. There is no doubt that when a cold is well under way, constitutional treatment must often be combined with local measures but not in every case, for just so soon as the local condition improves the general symptoms clear up also. There is no further absorption of toxic products from the focus of original infection. Local treatment cannot be self-applied, for it is obviously impossible for anyone who does not know the anatomy of the nose to see what he is doing,—in fact the specialist does not always find it easy even with all his resources.

A great many people imagine that it hurts fearfully to have the nose or throat treated. They dread an examination even, because the physician will put in some big instrument and push or pull with all his

might. Nothing could be further from the truth. Examination hurts about as much as walking out into the sunlight on a beautiful day in June. You cannot use blacksmithing methods on a watch. The very essence of successful treatment is gentleness and regard for the patient's sensibilities. The work proceeds about as follows: A careful history of the difficulty is taken down on a card stating the number of days the illness has been going on, presence of pain, discharge, headache, cough, character of sputum, color, etc., loss of appetite, constipation and general bodily health. The patient then seats himself before the examiner and is examined under strong illumination, every detail being noted. If an acute rhinitis is present the nose is numbed with a mild spray of novocaine to which a few drops of adrenalin have been added. This opens the nose so that it is possible to see all parts of the nasal fossae. An application is then made of some good antiseptic by means of a cotton wound applicator to all parts which can be reached. If much discharge was present before the application, this was washed out so that the remedial agent can work to best advantage. If the throat is involved, the same method is used there, care being taken to reach all swollen and congested membrane. With the presence of an acute bronchitis, one must go a step further, it is essential to instil drops directly into the trachea so that as much of the lung surface as possible will be medicated. Some of the medicine thus introduced will be coughed out, but enough will remain to be effective in destroying large numbers of bacilli. These treatments must be carried out twice a day for two or three days at the end of which time the patient can usually be discharged. However, in

virulent conditions such as grippe, a week may be required before the disease is under control. This direct method of treatment is so successful that it is perfectly surprising how few people know that it can be done. If it were widely known days of anxious suffering could be avoided. Every nose and throat specialist is equipped to carry it out thoroly and efficiently.



Conducted under the Editorial Direction of
Dr. John W. Wainwright.

Sodium Gynocardate in Leprosy.—Leonard Rogers, (*British Medical Journal*, October 21, 1916) declares that the fractionization of chaulmoogra oil yields several different portions, that of the lowest melting point yielding fatty acids, the sodium salts of which are readily soluble in water, and relatively only moderately irritant upon hypodermic injection. These salts are also relatively nontoxic for animals when given intravenously; the last fraction is called the gynocardic acid fraction, and the sodium salt, sodium gynocardate, since this acid forms the greatest proportion of those present. This sodium salt may be given intravenously to man in leprosy in the form of a two or three per cent. solution to which one-half per cent. phenol has been added, and which has been sterilized in an autoclave. Doses of 6 to 50 mgm. have been given to man without any toxic effects. In giving these doses there often follows a definite local reaction and sometimes fever; after the subsidence of the fever the tissues are softer and the nodules, if present, diminished in size. Such results are not obtained from the subcutaneous use of the agent, even in much larger doses. Rogers has treated some twenty cases of leprosy by intravenous injections of the sodium gynocardate and in all which it has been possible to carry out

the treatment for a sufficient time, there has been very marked improvement with healing and disappearance of local lesions; disappearance from open lesions of the bacilli; return of sensation in anesthetic areas and restoration of function in paralyzed parts.

Intraspinal Injection of Bichloride of Mercury.—E. L. Hunt (*Boston Medical and Surgical Journal*, June 1, 1916,) declares that the administration of bichloride of mercury directly into the spinal fluid gives practically the same results as that of mercurialized serum. It has the advantage over the latter of simpler technic, shorter method, and easier administration, with less opportunity of infection. The great advantage, Hunt thinks, lies in the fact that the operation is simpler, and there is less involvement on the part of the laboratory. Both methods, that of the mercurialized serum and that of the bichloride directly injected into the spinal fluid, can be considered as possible substitutes for the administration of salvarsan. Whether the results will be as permanent as those of salvarsan remains to be seen. The dose should begin, Hunt declares, with 1/64 grain and later increased to 1/50.

In no instance was any change manifest in the reflexes, but change was evident in tremors, in the pains, in the spinal fluid content, and especially in the general condition of the patient.

Ammonia as an Enema in Postoperative Ileus.—An interesting article by Black appeared in the *London Lancet* for February 12, 1916, abstracted in the *Therapeutic Gazette* July, 1916, on the use of ammonia enemas in postoperative ileus and intestinal paresis. These conditions are always distressing as well as dangerous to the patient and extremely annoying to the surgeon. They are often reported as fatal complications following operations at the seat of war now in progress in Europe. The formula and technic for use as given by Black are as follows: Liquor ammonia fort, one (1) dram, aqua one pint; this to be administered as an enema; the effect is said to be greatly enhanced by a hypo-

dermic injection of 1c.c. of pituitary extract half an hour previous to the injection. This treatment ensures a free stool with an excessive discharge of flatus, and has succeeded where the ordinary enemas such as turpentine, eserine, etc., have failed to give relief.

Black warns against the too frequent use of this agent or in greater strength than as above. Such use will likely injure the rectal mucous membrane, and be followed by rectal hemorrhage or painful septic colitis.

Optochin in Treatment of Pneumonia.—

Silbergleit, (*Berliner klinisch. Wochenschrift*, November 29, 1915), details an experience of more than a year in the treatment of pneumonia with the preparation optochin. He made accurate comparisons with simultaneous cases of other practitioners which he used in arriving at conclusions concerning the therapeutic value of this, one of the newer remedies. Both groups of cases were treated in the same way with the exception that one received optochin, the others ordinary treatment as given by progressive clinicians. His conclusions were that this agent did not shorten the course of the disease, did not control the fever promptly, did not influence mortality or reduce the number or severity of the complications. The only appreciable benefit noted was in its mild antipyretic action and in its causing some feeling of well being and personal comfort; euthanasia. Its use did not obviate the necessity for cardiac stimulants. Finally the beneficial effects of optochin in pneumonia were relatively slight when compared to its possible unfavorable action in causing disturbances of hearing and vision. Used, however, in amounts not exceeding six doses daily of 0.2 grain each, untoward reactions were seldom noted.

Nitrous Oxide and Oxygen, the Most Dangerous Anesthetic.—Baldwin, (*Medical Record*, July 29, 1916,) refers to Titus who reports 26 nitrous oxide-oxygen fatalities; Miller who has collected from literature 18 deaths; Roosing who reports 13 deaths, many of which had been suppressed and who gives the death rate of chloroform as one in 2,000, and one in 500,000 for

ether; and Gwathmey who knows of from 24 to 40 unreported deaths. Connell believes that the reported and unreported deaths far exceed those from ether and regards the disadvantages of nitrous oxide-oxygen as far outweighing its advantages. Luke reports one death out of 200 administrations. At the Mayo clinic there were no fatalities in 1,400 cases given as a preliminary to ether, but this method was not satisfactory and has since been discontinued. Gwathmey reports three fatal cases occurring before any marked change was noticed, and all efforts at resuscitation failed. Baldwin reports details of 14 fatalities in Columbus, O. Ochsner has made careful test with 100 consecutive cases of nitrous oxide-oxygen compared with a similar number of ether anesthetics by the drop method. He finds no difference in the course of the anesthesia except a little more bronchial irritation following the nitrous oxide-oxygen. Absence of this condition is one of the strong claims made for the nitrous oxide-oxygen by those who advocate it.

Popular Eczema.—The remedy most efficient for this type of lesion according to Levin, (*Med. Review of Reviews*), Feb. 1917) is a lotion which relieves the itching, promotes evaporation, favors absorption of the infiltration and reduces the congestion. Either the lotion with menthol and phenol as given above is prescribed or the following:

℞ Pulv. calamin prep.	6.0
Zinci oxidi	16.0
Glycerini	24.0
Phenolis	2.4
Aquae calcis	32.0
Aquae	qs ad 240.0

When papular eczema tends to persist and become chronic liquor carbonis detergens four grams to the ounce should be added for its stimulating and antipruritic effect. Lotions should be applied frequently and when the pruritis is severe it may be necessary to dab them on every two hours. Bland oil is used to cleanse the lesions once a day. Glycerin should be omitted in cold weather because it makes the skin cold and clammy by virtue of its hygroscopic action. When too drying lime water should be omitted for distilled water.

**When to Discontinue Organotherapy.—**

The length of time during which organotherapy is continued is quite important and a recent question as to when to stop the use of a certain remedy of this character is quite in order.

Generally speaking the most effective results from organotherapeutic preparations follow their continued use for some weeks or months, for the reason that with few exceptions organotherapeutic preparations are principally active because of their homostimulant action, i. e., the actual hormones in any given organotherapeutic remedy are present in very small quantities and with rare exceptions do not suffice to replace the missing chemical substance due to the disordered function that may be under treatment.

As has been emphasized previously in this department, Hallion has shown that "extracts of an organ exert on the same organ an exciting influence which lasts for a longer or shorter time. When an organ is insufficient it augments its action, and when it is injured it favors its restoration." Hence the principal action of a hormone remedy is to augment the production of hormones by the organ which corresponds to that from which the extract was made.

Just when the normal hormone production has been fully reestablished is very difficult to state. In most cases it is best to continue the treatment for some weeks after the desired results have been attained and during that period gradually to reduce the dosage. In many instances it has been found advisable to divide the treatment into several periods, continuing the administration of the indicated extracts for some weeks and then allowing a short interval to intervene before resuming medication.

In any event, many an experience gives

considerable emphasis to the opinion that frequently hormone remedies act by setting in motion certain physiological activities, just as one starts a pendulum. A very slight stimulus may suffice to reestablish things on a normal basis.

Of course the administration of preparations of the posterior pituitary lobe or the adrenal medulla is not intended to produce a homostimulative effect, but these remedies are given for their immediate results and here the dosage is small and even one single injection may accomplish the desired results.

It is very important to give sufficient dosage of a given remedy, say corpus luteum, mammary gland, pituitary gland, or what not, to exert a definite effect, and the step-ladder increasing of dosage, followed later by a similar diminution thereof, is in the light of experience the way to secure the best results without untoward incidents.

Is There an Anaphrodisiac Hormone Remedy?—

The above question was recently put by a reader of this department and there is little or no literature to be found on this subject in current medical publications. Generally speaking, the hormones are stimulants, and all who have made a more or less extended use of organotherapy have discovered that it is much easier to bring about a physiologic reaction of a stimulating nature than it is to retard or antagonize excessive edocrine activity. For instance, the organotherapeutic treatment of hyperthyroidism is not nearly so simple and so decided in its results as the use of thyroid extract in the opposite condition, or myxedema. The administration of corpus luteum in conditions of ovarian

insufficiency is attended by much more striking and constant results than the hormone therapy of hyperthyroidism.

While it is conceded by a number of writers that the internal secretions of the mammary glands and the ovaries are antagonistic, a fact which is frequently made use of in the treatment of conditions like menorrhagia due to increasing ovarian function (see item in a previous issue, *The Treatment of Menorrhagia with Mammary Extract*, AMERICAN MEDICINE, January, 1917, p. 64) there seems to be no record in the literature of a similar antagonistic remedy to hypergonadism, tho it is not impossible that mammary extract may exert an as yet unappreciated effect which may be valuable in the treatment of aphrodisia in the male just as Oliphant Nicholson of Edinburgh, and other writers have indicated that testicular extract was found to exert a definite influence in the treatment of certain female disorders. At least mammary therapy might be tried on hazard, for it should have no detrimental effects.

The thymus is known to exert a physiological antagonism to the gonads, altho at certain periods of development it seems to produce a directly opposite effect. For instance, it has been discovered that the removal of the sex glands of rabbits has been followed by hypertrophy of the thymus while the normal atrophy of the thymus just prior to puberty is arrested by extirpation of the gonads.

On the other hand, Noel Patos of Glasgow, who has done considerable experimental work in this direction, noted that thymectomy on immature guinea pigs is followed by a rapid development of the testes. Other investigators have shown that the thymus gland is heavier and evidently has a greater physiologic activity in capons than in cocks.

From these and numerous other experimental investigations, it seems probable that the thymus inhibits the development of the testicles and also that the disappearance of the thymus is concerned in the establishment of the internal secretory activity of the sexual glands. So far as is known at present, there is no record of thymus extract having been administered as an aphrodisiac, altho there may be the slightest theoretical basis for its use.

Since, then, we do not at present know

of any dependable hormone treatment for the control of excessive sexual excitement, either or both of the above organotherapeutic extracts might be tried, but recourse to the best known sedatives combined with the removal of the various circumstances which favor the stimulation of the glands doubtless is still the best treatment.

Corpus Luteum in the Nausea of Pregnancy.—Several reports are to be found in the literature of the past year telling of experiences with hypodermic injections of the soluble extract of corpus luteum, and Dr. John Cooke Hirst of Philadelphia, has made several contributions to the growing literature on this subject.

In a recent communication in the *Journal of the American Medical Association* for February 26, 1916, page 645, he reports several clinical cases treated by hypodermic injections of one mil. representing twenty milligrams of the extract.

Hirst believes that it is not unreasonable to suppose that there is sufficient absorption from the corpus luteum of pregnancy to account for the gradual disappearance of the nausea, especially when it is remembered that this nausea begins to diminish at the time when the corpus luteum reaches its height of development.

The clinical cases are briefly reported here and show 80 per cent of successful results even tho the number of cases was small. According to Hirst, the results are better than from any other routine form of treatment and with larger doses it is likely that still better results will be secured.

Mrs. L., age 27, third pregnancy, severe nausea as in previous pregnancies. At eight and one-half weeks she was given four doses. Reported great relief after first dose and no nausea at all after the fourth. Hirst believes that such rapid effects indicate that the vomiting was of neurotic origin, and does not call this a fair test.

Mrs. R., age 38, fourth pregnancy, excessive nausea in the 7th week, previous pregnancies accompanied by nausea lasting until after the 5th month, nine successive doses so relieved the nausea that the patient described it as negligible.

Mrs. H., age 24, third pregnancy in three and one-half years. Now twelve weeks preg-

nant, nausea still marked but diminishing. Eight injections controlled the disturbance and she is now comfortable with only occasional twinges of nausea, three weeks after the last dose was given.

Mrs. S., age 24, first pregnancy. Nine weeks pregnant and for one week has been confined to bed with severe nausea. After four injections she was worse than ever, total failure, which may have been due to a large goiter which this patient had. Nausea controlled by lavage and large doses of bromides.

Mrs. D., age 30, third pregnancy. In both previous pregnancies hydatid moles were removed in the early months with severe bleeding, excessive nausea thruout both pregnancies. Now nine weeks pregnant and confined to bed with nausea. She has received 18 doses and during the first ten she alternated between comfort and discomfort. Since the tenth dose there has been no nausea at all, tho treatment is being continued on account of the possibility that it may prevent a third hydatid mole.

Ovarian Extract in Kraurosis Vulvae.—

The internal secretion of the ovaries exerts a decided influence upon the circulation of the external genitalia, as is readily noted following the menopause or the surgical menopause. This also may be proved by experimental ablation of the ovaries in animals. On the other hand ovarian extract given experimentally to virgin animals produces rut and even in castrated animals this phenomenon may be brought about. There is plenty of evidence that ovarian therapy produced hyperemia of the external genitals and with this experimental basis Schickele first administered ovarian extract to a patient suffering from kraurosis vulvae with a cure which was both symptomatic and anatomical.

Graves (*New York State Jour. Med.*, Aug., 1916) mentions three cases of this disease which he has successfully treated with ovarian extract, one of which was treated for eight months with complete relief of the symptoms and immense improvement of the local vulvar condition. In the two other cases persistent administration of this remedy "greatly relieved the symptoms of this distressing disease."

Presuming that the same principle would apply in other vulvar conditions, Graves attempted to cause local hyperemia by ovarian therapy in a case of the rare condition of chronic vulvar furunculosis. Despite seven years' duration and treatment by numerous physicians the multiple furuncles on the labia were uncontrolled and in Graves' own words "the administration of ovarian extract brought immediate relief." Strangely enough the patient later stated that whenever she felt a suggestion of the old irritation she was able absolutely to prevent its progress to pimples and boils by taking the ovarian capsules for several days.

The hyperemic influence of ovarian extract on the external genitals may be used to good advantage in conditions such as the above where an increased circulation is likely to be of benefit.

Spleen Extract as a Hematic Reconstructant.—

In the course of a paper discussing the function of the spleen, Brinchmann (*Norsk Magazin for Laegevidenskaben*, November, 1916, p. 1451) tells of having administered spleen substance with advantage in a number of cases of anemia. Evidently it is a useful measure and complete figures are given of the results of this method in a case of anemia accompanied by myeloid metaplasia. Fresh spleen extract reduced the proportion of nucleated reds in a remarkable manner (fully outlined in the very comprehensive paper) and the clinical experiences were paralleled by similar findings in experiments upon animals.

Pituitrin for Abdominal Distension.—

Ehrenfried (*American Journal of Surgery*, September, 1916) discusses personal experiences with appendicitis and tells of recently having acquired the habit of using pituitrin to relieve or forestall abdominal distension following abdominal operations. He gives as many injections as may be needed, up to six during the 24 hours and always with benefit. Ehrenfried has had recourse to moderate stimulation when it seemed to be necessary and in these cases has avoided morphin altogether.



"CIVIC" CIVILITY.

To the Editor of
AMERICAN MEDICINE:

At the invitation of a member of the Civic Forum, I attended a meeting at the Stuyvesant Branch of The Educational Alliance, on the evening of January 10, 1917.

The speaker of the evening was Dr. Haven Emerson, Commissioner of Health, of this city.

The audience was a small one made up almost entirely of young workingmen and women, with a sprinkling of their elders. The relation of the Department of Health to the community was the topic of the evening, to which the audience gave a respectful and undivided attention.

At the end of the lecture, the audience had the privilege of asking questions pertaining to the subject of the evening. These questions were all pertinent. They were well put and showed a desire for real knowledge that must have been flattering to anyone desiring to impart it.

Among the duties of the Health Department that were explained at length, were those relating to restaurant inspection and the physical examination of waiters. In the lecture a concrete example was given of the danger of having food served by a waiter who might contaminate the receptacle on which it was served, thru the medium of the secretions from his mouth.

After a number of questions had been answered, I endeavored to obtain, and did obtain with some difficulty, the privilege of asking a question. An assistant to the lecturer who provided some facts for him during its course, rose to his feet at the time I did, and said, "the meeting was to be closed in two minutes." I then realized

that some of the exceedingly long drawn out replies to the previous questions of the young boys who had preceded me, might have been of the character which in "political" and "sporting" circles are designated as "sparring for time."

In the old unsocial days where "heelers" figured at political meetings, this act would certainly have been regarded as of this kind. In these days of "civic" meetings with "social secretaries," no such thought could be entertained.

Reverting to the contamination of the plate by the waiter alluded to in the lecture, I said that I had long endeavored to ascertain why the practice of handing out transfers in street cars had been permitted under the insanitary process of serving them, moistened with saliva from the mouth of the conductor. This necessitated in many instances the folding of these tokens, to avoid a visible contamination from contact of this kind. It was possible to reject food when it was served in this way, but there was no possible way of escape from the acceptance of these transfers from conductors, none of whom were examined.

Furthermore in the new type of street cars, every possible attention was given in their construction to compelling passengers to do for themselves these duties that had previously devolved upon the companies. Why, I asked, was not some arrangement made by which passengers could serve themselves with transfers or be served by the companies, without this drawback?

In reply I was told, "that people were not expected to eat in a street car, and thus they were safer than in a restaurant on this account."

Admitting this in rebuttal, I pointed out the fact that conductors frequently carried their transfers in a fashion that suggested

the idea that they were making a meal of them, and that I had long ago suggested that all incorrigible offenders of this kind, if they could not otherwise be broken of the habit, should be muzzled as a deterrent.

Absolving the present Commissioner of the Department of Health of all personal responsibility for this omission, I nevertheless wish to record his reply. It was, "that a more general muzzling might be beneficial in some quarters, and that his department had not yet succeeded in muzzling all the 'dogs.'"

At the close of the meeting a gentleman, who by the freemasonry of our Craft, I judged to be a doctor, verified the closing remark made by the Commissioner of Health, meanwhile giving me his name. This he said I could use any time in any future undertaking in which I might be interested.

JOHN P. DAVIN, M. D.

A FINE SPIRIT.

To the Editor

AMERICAN MEDICINE:

Among some of the supporters of the *Medical Economist* there is a disposition to admit a justification for the friendly rebuke contained in AMERICAN MEDICINE for December in reply to an article in the November *Economist* reflecting on those of our brethren as yet outside the ranks of The Federation of Medical Economic Leagues.

It might be urged in extenuation that we are as yet but a volunteer corps hastily mobilized in the defense of medical rights, privileges and traditions, now so overwhelmingly invaded by powerful forces from without, aided by insidious foes from within.

If in the stress of our early engagements with the enemy we should prove to be faultily equipped and undertrained in comparison to the "regulars" of the Medical Press it is not a matter of surprise; rather it is something to have been expected.

That we should have fired a volley, inadvertently aimed, and wounded among others one so highly respected and so generously inclined to our cause as AMERICAN MEDICINE is to be sincerely regretted.

—*Fraternitas.*

THE TREATMENT OF TUBERCULOSIS—A REPLY TO DR. GEYSER.

To the Editor

AMERICAN MEDICINE:

I notice in your December issue of AMERICAN MEDICINE criticisms of myself and also of my Presidential Address before the "American Electro-Therapeutic Association," by Dr. A. C. Geyser, that reflects upon me and my work in such a manner that I feel I should answer at least part, or all, of the charges, and trust that you will give me that privilege.

First, there is no claim in my paper to "embody the perpetuated old as well as things new, in the Electro-Therapeutic world." I did not go into the *minutia* of electro-therapeutics at all, as the address was delivered before the most learned body of electro-therapeutic specialists in existence, so there was no use of discussing the A B C's of electro-therapeutics.

Second, Dr. Geyser ridicules the idea of the Health Boards of the States, Counties and Cities conducting the campaign, or effort, to eradicate the scourge of tuberculosis; yet, there has never been a scourge of any infectious or contagious disease controlled by any other method, and he fails to offer us anything better.

Third, his real effort is centered against this paragraph of the article: "I say my method, because by this method, namely, 'the adding of X-ray for its direct and specific effect on the bacilli and the lung tissues or cells of the lungs; static electricity for its direct effect upon the heart, nervous condition, and general metabolism; and inhalations of an ozonized oil nebula for its effect on the cough, added to the ordinary dietetic, climatic, rest, and medical care, as generally used in the treatment of pulmonary and other forms of tuberculosis,' I have, in this present year, been able to save from death over ninety-two per cent. of all applicants, in all stages and with all complications of pulmonary and other forms of tuberculosis."

In reading this full paragraph, it will be seen that Dr. Geyser's sarcasm on my treating cases without bacilli, falls to the ground. He claims this method of treatment was tried from 1905 to 1908, in three hundred cases at Cornell and

was abandoned; therefore, he denies, emphatically, "any specific effect of the X-ray on the tubercle bacilli;" also denies that "static electricity has any effect on the heart, nervous condition or general metabolism." Dr. Geyser should remember I began reporting cases in this work before this Association in 1901, and have been at the work now for nearly seventeen years, while reports have grown from a report of three cases in 1901, to many hundred cases, not only by myself and followers in this country, but by some of the most renowned clinicians of Germany. I announced many years ago that opsonins and the opsonic index in pulmonary tuberculosis could be controlled by the X-ray. This Dr. Crane, of Michigan, and McCullough, of London, were able to substantiate. I also announced later that with the hyperemia and engorgement of the tuberculous lung, produced and maintained by X-ray treatment, we have an autogenous vaccine produced, and upon its successful production and proper dosage, depend largely the successful outcome of the case. Both of the above hypotheses, claiming a specific effect upon the bacilli and tissues, was announced by me years ago. I will now refer the reader to not only the article of Crane and McCullough, but also to Zinsser's work on "Infection and Resistance," pages 341, 342 and 347, where both of the above theories are confirmed by Zinsser in spite of the denial of Dr. Geyser of Cornell. I also refer, for further proof, if any is needed, to the "Report of Committee on Standard Therapeutic Measures" of the American Electro-Therapeutic Association, page 28. As further proof, I refer to article by Professor Dr. La Camp, Freidberg, Germany, "Zur Strahlentherapie der Experimentalen Menschlichen Tuberkulose"; also Dr. L. Kupferle, "Roentgen Behandlung der Lungen Tuberkulose." Herr Dr. Fraenkle, Berlin, "Behandlung der Lungen Tuberkulose mit Roentgenstrahlen." Supported by this list of authorities, I believe I have a right to assert that the X-ray does have a specific effect upon the bacilli, and pathological and normal cells in pulmonary tuberculosis, in spite of the denial of Dr. Geyser.

Dr. Geyser's denial of the special effect of static electricity upon the heart, nervous condition and general metabolism, is absolutely without foundation. If it is of no

use in either of these three conditions, why should he have continued to use it for these twenty-five years? My claim that static electricity may be used for its direct effect on the heart, circulation or blood supply, nervous system and general metabolism, is abundantly proven by referring to any late standard work on electrotherapeutics; also to the late "Report of the Committee on Standard Therapeutic Measures" of the American Electro-Therapeutic Association, pages 14 and 21. These references prove I am absolutely right in my contention, and Dr. Geyser wrong.

Fourth, ozone in the form of an ozonized nebula, which I recommend only as an aid in "relieving the cough." I know all about the controversies alluded to by Dr. Geyser. I know, probably better than Dr. Geyser, that there is no inhalant known that is a specific for tuberculosis, but am glad to get anything that will help to relieve cough of my tuberculosis patients.

By this method, I have been claiming for years we should be able to save as "bread-winners" or practical cures, about ninety per cent. of all cases, all stages and all complications of pulmonary tuberculosis. Last year, ending September 1st, I averaged a little over ninety-two per cent. for the year. This average is the best I have been able to make so far. If Dr. Geyser can give us something that will give better results than this, we will be under many obligations to him.

Fraternally yours,

J. D. GIBSON.

Denver, Colo.



Tonsillitis.—In the December, 1916, number of the *Therapeutic Gazette*, Stauffer presents the treatments and sequelae of tonsillitis. He divides the subject of treatment into four parts: (1) Incipient tonsillitis, (2) Active tonsillitis, (3) Preventive tonsillitis, (4) Complications of tonsillitis. In the incipient stage, if the patient will immediately go to bed where he will have absolute rest, keep ice constantly in the mouth and cover the throat with an icebag, he will be

properly started on the road to an early recovery. Calomel 1/10 grain doses dissolved in the mouth every hour for the first two days, with salts at night, with aspirin five grains or sodium salicylate five grains every three hours, he has found the most reliable remedies. Local treatment aids much in aborting the disease, and for this daily applications of nitrate of silver 60 grains to the ounce with 50 per cent Dobell's solution every hour as a gargle are the best antiseptics. In active tonsillitis he insists on the patient remaining in bed, because of a possible endocarditis. A dry ice collar is applied with frequent sponges with alcohol and oil of wintergreen rubs. Gargle every half hour with 50 per cent H₂O₂. Locally he paints the tonsils liberally with 60 grains to the ounce of nitrate of silver. He has seen symptoms decline, and convalescence quickly started, by this ideal remedy in the early stages of the disease. Guaiacol 25 to 50 per cent in olive oil is the next best remedy. This should be rubbed in the tonsil twice daily for several days. Sodium salicylate ten grains every three hours with water or lemonade, will relieve the headache and backache. For peritonsillar abscess the only relief is the early use of the knife. The proper practical treatment of tonsillitis should be prevention. It can be prevented by removing the cause; the adenoid and tonsil operation when indicated.

The Technic of Tonsillectomy.—Ersner takes up the problem of infiltration anesthesia in connection with removal of the tonsils and gives the following technic:

1. The anterior and posterior tonsillar pillars are swabbed with a ten per cent. cocaine solution. The swab is very thin and thoroly squeezed so that no excess of cocaine is spread over the tonsillar area. Just enough cocaine is applied to take off the sharp sting of the needle when the saline is injected.

2. About two and one-half to three drams of normal saline are injected back of each tonsil in the following manner: Superior pole, inferior pole, one injection each; anterior pillars and posterior pillars two injections each. In buried tonsils it is often advisable to catch the tonsil with the tenaculum and pull it forward to inject as described above. When infiltration is perfect, the tonsil bulges out and becomes pale owing to retrotonsillar pressure.

When the myocardium is good, two minims of adrenaline hydrochloride, one in 1,000, are added to the solution for each tonsil, but recently the adrenaline has been dispensed with, altho since then patients have expectorated from two to three drams of blood. However, this lessens the danger of postoperative hemorrhage, which is most dreaded. Again, adrenaline hydrochloride is a vasomotor constrictor and, as described above, many patients upon whom local tonsillectomy is performed, are adults who at one time or another have had some involvement of the myocardium or endocardium. By eliminating the adrenaline the danger from strain upon the heart is avoided.

The author summarizes his results as follows:

1. The saline solution is freshly prepared and sterilized, and thus we avoid infections from this source.

2. The saline solution being isotonic, really acts as a cleansing tonic to the tissues, for there are no appreciable sloughing, except from extreme pressure in a few of the very earliest cases, but it was not very marked.

3. The saline can be used to excess without any fear of toxicity.

4. When the tonsils are properly infiltrated, there is absolutely no pain, except in a few cases due undoubtedly to the nervous element.

5. Last, but not by any means least, post-operative sloughing is avoided, healing is promoted, and most patients are able to take food without difficulty within the next twenty-four hours.

The Successful Treatment of Colles' Fracture.—In Colles' fracture, says Robert T. Morris (*New York Med. Jour.*, Jan. 6, 1917) injury to the soft parts is more important than injury to the hard parts. *Ergo*:

1. Always anesthetize the patient and make such correct adjustment of fragments that soft structures within the annular ligament will be freed from compression or angulation. This idea includes the step of freeing the external lateral ligament of the wrist when it has been button-holed by the ulnar styloid process.

2. Apply a very short and light moulded splint of cardboard to the posterior aspect of the fragments, and a small loose roll of gauze to the anterior aspect of the fragments. If this does not suffice to hold the fragment nicely in place, add a cardboard splint to the anterior aspect after removing the gauze roll. If muscle spasm is present in the case, add a light long basswood splint to the posterior aspect of the fragments, reaching to the knuckles. Without muscle spasm and without a tendency for the fragment to become displaced readily the Colles' fracture patient will do best on the smallest and lightest splinting which will suffice for immediate needs in any given case.

3. Suspend the arm at easy elbow flexion in a sling.

4. Extend and flex the fingers very gently once a day at first, in order to prevent plastic exudate from sealing the tendons in their sheaths, in the vicinity of the fracture. Increase the finger motion later.

5. Extend and flex the hand on the carpus gently once a day at first in order to avoid carpal adhesion formation. Increase the carpal motion later.

6. At the end of three weeks remove the splints permanently, but retain the sling for another week.

7. At the end of three weeks excite a Bier's hyperemia daily with the rubber bandage, or excite a hyperemia by plunging the hand and wrist alternately into hot and cold water for five minutes morning and night. A hyperemia thus induced will favor rapid absorption of interstitial and synovial exudates. It will also stimulate activity of injured nerves.

8. Add massage to the hyperemia resource for as long a time as appears to be desirable.

9. Do not swear in a court of law that this is the best treatment for Colles' fracture. State that it is first rate routine for the average case.

Is Atropine a Neglected Remedy?—A great many medical articles are written extolling the virtues of atropine, says an editorial writer in the *Med. World*. As a matter of fact, however, we believe this alkaloid has no wide spread use. We know that it generally tags along with hypodermic morphine tablets, altho we never could see any earthly reason for combining two agents that hate each other so badly. Then occasionally some one reports good results from atropine in hemorrhagic conditions. The general practitioner may occasionally employ this remedy to check enuresis, allay spasm or check excessive secretions. Atropine seems to find the greatest favor, however, in hemorrhages. All exceptions are in the case of hemorrhages so severe and sudden that death has occurred before atropine has had time to act.

All other cases of hemorrhage of every description have been remedied by a full dose of atropine, sufficient to dilate the cutaneous capillaries and thereby flush the face.

Atropine is highly serviceable in dissipating spasm. Pertussis, chordee, asthma—there is scarcely a spasmodic malady in the category which does not acknowledge the domination of atropine, altho it sometimes fails.

So many forms of pain are really spasmodic in their nature that one is tempted to term this alkaloid the kind of pain, dethroning the less effective morphine. Atropine does not lock toxins in the system or establish the drug habit; its effects are powerful and lasting. Colics give way to its influence, and the spasm of the circular fibers of the bowel that is present as a factor in many forms of obstruction relaxes—so that many a clinician looks first to atropine in his cases of strangulated hernia, and only resorts to the knife when the lesion is not alone spasmodic. Many hernias can be reduced after a hypodermic of 1/50 of atropine sulphate. As a rule atropine should be given alone. The action however is quickened by the addition of nitroglycerine, and deepened and prolonged by that of strychnia—both in very small doses. If all of this is true, the inevitable conclusion must be that atropine is a neglected remedy.

The Operative Treatment of Goiter.—The operation for the relief of goiter, according to H. B. Epstein (*Am. Jour. of Surgery*, Jan., 1917) calls for the following important considerations, the observance of which has largely contributed to the success attained in the modern operation for thyroidectomy:

First: The collar incision should be of sufficient length to permit a free dissection, the ample space giving the surgeon better exposure and making the procedure safer.

Second: The choice of alert assistants, for

rapid hemostasis is essential. This together with speed saves the patient from unnecessarily long anesthesia, too much handling and shock.

Third: After separating the fibers of the sternothyroid muscle keep close to the gland thruout the separation. If necessary, the sternocleido mastoid muscle may be cut across to give better exposure to the parts, the ends being sutured after the gland is removed. Care should be exercised to avoid the spinal accessory nerve.

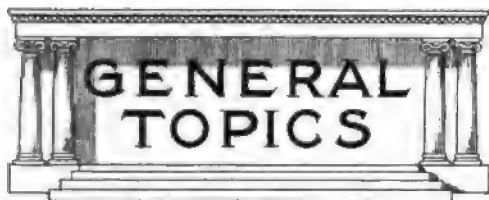
Fourth: Careful dissection of the posterior and lateral borders in order to avoid injury to the carotid sheath or the inferior laryngeal nerves.

Fifth: Be sure to expose, freely, the upper pole of the gland so that a safe ligation may be performed with a generous pedicle. If necessary, cut the transverse layer of the deep cervical fascia. This is an important factor in reaching the superior thyroid artery and veins.

It is necessary to leave a small portion of the gland behind and also to avoid injury to the parathyroids in the dissection. The body being already over-saturated with thyroid secretion, it is advisable, in order to avoid additional strain, to handle the glands as little as possible. Vessels should not be ligated until the dissection is completed. If the temperature rises to a considerable height within twenty-four hours and the pulse is accelerated to over 120, with a suffusion of the face and eyes, I administer hypodermatically atropine sulphate, gr. 1/80, every two hours until reaction occurs.

The Use and Abuse of Pituitrin.—Skeel (*Ohio State Journal of Medicine*, December, 1916) concludes that pituitrin has three distinct fields of usefulness in obstetrics: 1. To terminate the second stage of labor in cases where no reason exists for delay except insufficient uterine activity and provided the head has reached the pelvic floor. This includes the delivery of the second child in twin labors. 2. Laceration of the cervix when used before complete dilatation. 3. To limit the bleeding in cases of marginal placenta previa, and in Cesarean section. Its possibilities for harm may be summarized as follows: 1. Rupture of the uterus if obstruction of any nature exists. 2. Laceration of the cervix when used before complete dilatation. 3. Laceration of the perineum when precipitate labor is caused by a full dose. 4. Occasionally its use results in tetanic uterine contractions somewhat resembling that produced by ergot, with consequent asphyxiation of the child. Before pituitrin should be used the following conditions should be fulfilled: 1. Complete cervical dilatation. 2. The membranes must be ruptured. 3. The presentation must be longitudinal. 4. There should be no malpresentation. 5. There must be no disproportion. 6. The presenting part must be completely engaged. It is a good plan to use pituitrin in fractional doses, 0.33 to 0.5 c.c., and repeat when the effect wears off. This reduces the risk of uncontrollable action. If pituitrin causes excessive pain either chloroform or ether should be

administered. It has been used as a galactagogue and as a substitute for the catheter in post partum urinary retention.



The Eskimo Medicine Man.—From the earliest times, says an Alaska correspondent in the *Medical Record*, (June 10, 1916) the subject of abnormal states of health and their treatment has been shrouded in mysticism with the Eskimo. They do not believe in healing through the medium of herbs or any form of medicine and they have the greatest horror of any form of surgical interference, but believe that certain persons are born with the gift of calling into play certain invisible powers by means of which the disease is driven out of the patient's body. These certain persons are the Medicine Men and the invisible powers are believed to be and are called Spirits by the Eskimo.

There are three distinct classes of natives inhabiting Alaska; the Indian of southeastern Alaska, the Aleut of western Alaska (in the region of the Aleutian Islands), and the Eskimo of northwestern Alaska. All three classes have about the same belief in regard to the medicine men but differ somewhat in their method of carrying out their line of treatment. They have a profound belief in the actions of good and evil spirits in the prevention, cause, and alleviation of disease.

The present letter is based on observations among the Eskimos, and the medicine man is described as seen today in this portion of Alaska.

There are about 18,000 Eskimos (Innuits) in Alaska and they inhabit principally the coast, so it is not surprising that their food and habits are associated with the sea. The natives are gathered in small settlements called "villages," each village having a chief and one or more medicine men. There is also in each village a council house called the "Kashim" or "Kasga," which is open to every one alike for work or play. It is the common meeting place where the natives gather for their dances and "pow-wows" and is also the place where the medicine men treat the sick.

As above stated the medicine men are born and not made. They usually descend from families long known in this vocation, altho occasionally a medicine man develops from other sources. In this same connection it may be of interest to note that there are a few medicine women.

Shamans, conjurers (tungkaks) and medicine men are looked upon as mediators with the invisible world. They claim to be able to call the spirits into their environment, to see them, and to converse with them. They also claim that there are several kinds of spirits and that

each spirit has a separate and distinct power of its own. The medicine man here tells me that there are five and that each one has the power to heal a certain kind of a disease (he recognizes five diseases); that when he calls the spirits and the wrong one comes, he must drive this one away and continue calling until the right spirit comes and that this may take as long as ten hours or as short a time as ten minutes. The writer thinks that the prosperity of the sick one is in direct proportion to the length of time required to call the *certain* spirit.

No two medicine men are alike because they associate with different spirits, however there is always rivalry in a village where there is more than one medicine man. One tries to get rid of the other and this results in ill feeling. As soon as the ill feeling becomes manifest, the Eskimo stamps the one with the most manifest malice as a fraud and the then preferred medicine man attempts to shorten the life of the "fraud" so, as a rule, we find but one active in a village, but the sick will often go from one village to another seeking treatment.

The sick may be treated at home or in the kashim, the latter being much preferred by all and believed to be more effective. In order to understand thoroly this procedure it is necessary to know the plan of the kashim. It is a building constructed in the side of a bank if one can be found, about 20x20 feet, with a 10-foot ceiling. The sides and top are built of logs and are covered with dirt. In the center of the flat top there is a hole about 2 feet square and covered with a seal-gut covering. This is the only opening thru which air and light can enter. The seal-gut window or covering is translucent and, as it is usually fastened down tight, there is little or no ventilation. All around the interior, about 4 feet from the floor, there is a shelf upon which the men sit (the women sit on the floor under the shelf). The floor is of dirt or boards; the center boards can be removed, exposing a hole 18 inches square. This hole is about 5 feet deep and is the inner opening of a tunnel, which tunnel leads to another vertical hole, which in turn leads to the storm entrance through which all persons must pass on coming into and passing out from the kashim. Some of the modern kashims have a door from the storm entrance, thus avoiding the underground passage, but the older natives and those far away from civilization believe that the crooked passageway will keep out evil spirits, therefore they will not allow the ground level door. The walls are as black as tar from smoke. This smoke comes from the seal oil lamps the Eskimos use and from the fire that they build in the inner vertical hole after all persons have entered.

When the Eskimo is taken sick and desires the services of the medicine man, the medicine man is notified. He in turn notifies the whole village, stating the hour, day, and place for the performance. At night, just after dark and in the kashim, is preferred. The natives collect in the council house and seat themselves, the men on the shelf and the women on the floor. The spectators are made up principally of men; however, all ages and

sexes are at times present. The medicine man makes his entrance through the underground passage. He is nude with the exception of a rain parka and a pair of short reindeer muclucs. A parka is a one-piece garment with hood and sleeves and slips over the head and falls to the knees. A rain parka is a parka made of seal gut. When finished it is translucent and will turn rain. This garment rustles like paper and is used by the medicine men on account of this property. Reindeer muclucs are short boots made of reindeer skins with the hair on them.

After the medicine man enters the kashim he calls for the patient. The patient is brought in, usually lowered through the opening in the roof, and placed in the center of the room. Selected men then sing (accompanied by the tom-tom of improvised drums) the medicine songs of this particular medicine man. The medicine man begins his dance, shaking the rain parka violently. From time to time he rapidly shakes his head from side to side, making a peculiar noise with his lips—"bluba luba luba-a!" The dance consists of standing in one place, leaning first on one leg and then on the other, throwing the arms around violently in a manner to show off the muscles and making various gruesome facial expressions. There is nothing artistic or pretty about the dance. The rustling of the parka and the songs are to call the spirits. From time to time the medicine man will stop and converse with a spirit. If this is the wrong spirit he will tell it to go away and the performance will begin all over again. This is kept up until the right spirit arrives. He then tells the audience and patient that he sees and is conversing with the invisible spirit. He will ask what is the matter with the patient and after a pause will state that the spirit says that this sick person did so and so, describing something that happened possibly many years ago, such as killing a female reindeer just before calving, or slapping a certain child (usually mentioning some act of which the medicine man knows). He will then ask the patient, "Is that so?" The patient will say "Yes," and the audience is then spellbound. The medicine man again converses with the spirit and asks what will heal the patient. After a few moments' pause he will turn to the sick man and tell him what to do to be healed. This treatment consists in prohibiting a certain kind or kinds of food, as, for example, the eating of seal oil, whale blubber, or dried fish; it may also forbid "the use of the knife." By this expression is meant that he must not chop any wood and at times this applies to the whole family. Sometimes the medicine man will hold a piece of fish or something else to eat, in his hand and ask the spirit to give this piece of food the power to heal the sick and will then make the patient eat it.

After the medicine man has finished his instructions there is much singing and rejoicing and the sick man is taken out of the kashim thru the opening by which he was brought in. This ceremony may last from a few minutes to an all-night performance, regardless of how sick the patient is.

The medicine man usually states that the sick person will rise from the bed at a certain time.

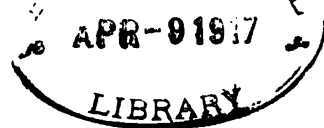
If the patient gets worse or cannot get up at that time the medicine man claims that his instructions have not been carried out and will at times become very much enraged about it or he may administer another treatment. The fees of these native doctors vary a great deal. Some few will not charge as they claim that in charging for their treatment they anger the spirits. However, this is not the rule as they get all they can. They may charge ten pounds of fish, so many gallons of seal oil, a dog, sleigh, furs, or anything. They get as much as they can and many of them do not work at all. The medicine man, next to the chief, is the most important and most respected Eskimo in the village. He is sometimes a "sleight-of-hand" performer and if successful is always one of the brightest of a settlement. This is necessary in order to gain the native confidence, as they look upon him as supernatural. The natives consult him and pay him for other things than treatment. For example, they consult the medicine man about the coming fishing, whaling, and sealing seasons and will often pay him so many furs to ask the spirits for a good catch. He also presides over the "Feast of the Dead," which will be described in a subsequent letter.

Alcohol Not an Antidote for Carbolic Acid.

In a recent number of the *Johns Hopkins Hospital Bulletin*, Dr. David I. Macht published the results of a series of experimental investigations relative to phenol poisoning and the antidotes ordinarily used in cases of this kind. It seems that we shall have to revise our ideas relative to the value of the various antidotes for carbolic acid. Ever since 1899, when Powell introduced alcohol as a preventive for phenol poisoning, this substance has been used probably more than any other for this purpose. It will be remembered that Powell used to demonstrate its value as an antidote by washing his hands in pure carbolic acid and then in alcohol, even by filling his mouth with the acid and then rinsing it out with 95 per cent alcohol.

However, the studies of Macht seem to show that not only is the alcohol useless, but actually increases the danger, because it hastens absorption. His studies also show that lavage with alcohol was followed by death more often than by recovery. When large doses of phenol had been given by mouth, washing the stomach with alcohol was followed almost invariably by death, in the experiments which he made upon cats.

The remedy which proved most effective as an antidote, in Macht's, was a solution of sodium sulphate. Dogs, he declares, withstand carbolic acid better than do cats, and he found it possible to save these animals by means of immediate lavage, irrespective of the remedy employed. After large doses of phenol, washing with sodium sulphate or plain water sometimes saved life. In late lavage, that is if the stomach was washed about fifteen minutes after the ingestion of carbolic acid, sodium sulphate gave the best results, plain water the next best, while as already stated, the use of alcohol was almost invariably followed by death.



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Economic Dietetics.—"Give us food, we are starving" has been the cry of countless groups of emotional, excited individuals, dominated by fear, inspired by rising prices, while the nation boasts of unusual prosperity. Investigation has been called for. Food embargo has been demanded. Municipal purchasing and distributing plants have been urged. Speculation has been rife. The gaunt spectre has been hazily seen. Associations, health departments, special committees have busied themselves to lower the cost of the necessities of life. A large variety of plans have been suggested and attempted in order to make possible a greater purchasing power for the shrinking dollar.

Investigations have indicated that actual starvation is not facing any large section at the present time. The reports of charitable societies show that there is less unemployment, more thrift, higher wages, and greater resources per family than at the corresponding season in previous years.

No single fact arouses more popular opposition than the decreased supply of foodstuffs. The lack of commodities ordinarily eaten, regardless of the causes leading to the shortage, increases their cost and sooner or later places them beyond the reach of the average consumer.

It is recognized that foods are essential for the maintenance of body growth, and tissue repair, and for the satisfaction of the heat and energy required for normal ac-

tivity. It is not merely a problem of protein or fat or carbohydrates, but of mineral salts and vitamins as well. The caloric needs of families of adequate means are readily satisfied. The food problem does not exist in its economic sense for those possessing a healthful income. When food costs begin to soar an adequate diet becomes more than usually contingent upon an adequate income.

The average American family is unfamiliar with the chemistry of nutrition and is unmindful because of ignorance of the relative merits of various foods. National tastes and prejudices, traditional cookery "like mother's," and palate habits have been dominant factors in determining the type of nourishment utilized in the average family. The value of foods in relation to the maintenance of health is not generally appreciated nor indeed is it satisfactorily taught in medical colleges so as to enable physicians to play their part in the instruction of the community in this particular direction.

Medical men realize that a lack of protein may induce anemia and malnutrition, that an insufficiency of vitamins produces scurvy or beriberi, that acidosis may be caused by an excess of food in the dietary, or that eczema may result from too much of any one of the fundamental types of foodstuffs. Knowledge as to the varieties of foods yielding iron, calcium, magnesium and the other mineral constituents neces-

sary to satisfy the demands of the body are generally disregarded, if known and understood.

A considerable part of the high cost of living may be overcome by a more judicious selection and economy in the purchase of foods. With the prices of commodities advancing, a reeducation of the public is requisite in order that consumers may purchase types of food to which they have not been accustomed, but which offer the proper elements for good nutrition.

Under ordinary conditions very nearly 50 per cent. of the family income is spent for food by those with an average weekly income between 10 and 15 dollars. For incomes above 1,500 to 3,000 dollars a year, one-fourth the income should be sufficient to supply adequate food for efficiency. For families with incomes below 10 dollars a week, the purchase of food necessary to sustain life adequately is difficult because only 30 to 40 per cent. of the income is available for this purpose.

Food economy depends upon practical information. The elimination of unnecessary articles in the dietary, the substitution of the cheaper cuts of meat, abstinence from innutritious types of foodstuffs require a working knowledge of economic dietetics. The development of hygiene and esthetics in package foods have increased the cost of a number of commodities without adding to their nutritive value. Unscientific marketing, a lack of adequate refrigeration facilities, and an insufficiency of storage space have contributed to raising the costs of foods to families least able to bear the additional expenditure.

The prosperity of the country has short circuited attention from the importance of dietetics. The fact revealed by medical in-

spection that fully 25 per cent. of the school children in this country suffer from malnutrition has not sufficed to emphasize the importance of continuous education of parents in the art of living. Cookery has been given far more attention than foods, nutritive values, and nutrition. The school systems thruout the country are now placing more stress upon home economics and the fundamental basis of home preservation and human conservation.

Inasmuch as physicians are in a sense held to be responsible agents in the dissemination of life protecting information, it would appear to be of tremendous importance that they be given the essential theoretic information relating to foods. Medical attendants, visiting nurses, public health nurses, dental hygienists, social workers and others entering into the homes of the poor or the sick should possess the facts enabling them to assist those whom they visit in the art of securing the maximum nourishment at the minimum cost.

Economic dietetics are closely related to the public health problem. Public health is not merely a question of food sanitation, or food esthetics, nor indeed of the satisfaction of hunger. It calls for balanced dietaries supplying the proper proportions of the various elements necessary for growth and development, and the satisfaction of the caloric needs of the organism. The specific foods containing iron, calcium, magnesium are as important as those containing protein, carbohydrates, or fats.

The medical man, as a rule, is more thoroly acquainted with specific dietaries for diabetes, nephritis, arteriosclerosis, typhoid fever, rheumatism, constipation, and other definite maladies than he is with the broad problem of nutrition. The high cost of living should awaken the profession to

its educational responsibilities in the preparation of undergraduates in medicine so that by the time they are ready to assume their public duties in practice they may be able to advise and guide those who find a clash between their palates and their pocketbooks, and who see in the rising price of commodities decreased health and lowered vitality.

The Theory of Health Insurance.—In

the widespread campaign to secure the adoption of compulsory health insurance bills by various states, there have been many weighty arguments advanced for and against the detailed provisions of specific bills. While strenuous efforts are being made to secure the passage of state laws of this character, equally forceful attacks are being driven against them by various groups in the community opposed either to the theory of such legislation, or to practical phases of it as manifest in pending legislation. Enthusiasm has run high with the protagonists and opponents of this form of social insurance. Unfortunately, in heated discussion centered about particular bills, too often insufficient attention is given to the principles underlying them.

What is the purpose of compulsory health insurance? Some regard it as merely another step in the development of a benevolent paternalism which seeks to deprive individuals of the opportunity of struggling upward into self-mastery at the expense of the state. Others view the problem as the recognition of the responsibility of the state for the protection of citizens from the diseases arising out of conditions for which the individual is not wholly responsible.

Still others stand aghast at the idea that the medical profession is to be exploited for the benefit of a large group of the population fully capable of paying legitimate fees, and can see no social purpose. And there are again others who see a far-visioned effort to organize the medical force of the state for the benefit of those at present unable to secure the most satisfactory and the most scientific medical care that is possible in a community.

The social theory underlying health insurance takes cognizance of more than the economic phase of the subject. The provision of medical attendance, death benefits, hospital care, the supply of necessary appliances, do not constitute the essentials or the theory of health insurance. In its broadest aspects, the purpose of compulsory health insurance is to mitigate disease and make health the paramount issue.

It is undoubtedly true that health insurance represents a practical and just method of distributing the economic losses incident to disease, but what is of greater consequence, it yields a financial impetus for the development of higher standards of health and social welfare which will tend to promote the public health.

Those phases of legislation seeking to provide facilities hastening the reestablishment of health possess values that are secondary to the theory that, thru health insurance, the standards of communal health will be raised. Its most vital function is not that of a relief system, but as an educational measure working directly and indirectly to establish conditions permissive of healthful living. Under a compulsory insurance system, the burden of illness must be met and, as a result, health is clothed with a financial value exceeding that which has existed up to the present. The lack of health is penal-

ized by a financial payment. The theorist sees within the skeleton of legislation its soul.

It is undoubtedly true that the prevention of disease, the elimination of disability and the improvement of environment are contemplated by those most solicitous about enacting health insurance into law. While it is undeniable that the mere presence of an act of this nature on the statute books will not secure directly the abatement of the mosquito nuisance, nor accomplish the purification of a water supply, the elimination of indefensible housing conditions, and the conquest of the scourges of cancer, tuberculosis or venereal disease, the pressure that will result from an appreciation of the cost of these conditions will result indirectly in vigorous steps toward their control and to an investigation of the conditions which must be palliated in order to reduce the frequency of their occurrence.

The direct educational advantages which may accrue thru the improvement of industrial environment, the installation of safety devices and the enforcement of personal hygiene in industry are bound to be reflected in homes. The appeal thru the pocket-book of the community will accomplish much when other means fail. Great advances were made in the control of alcoholism when large industrial concerns refused to employ chronic drinkers. The relation of alcoholism to industrial accidents and disease aroused employers to the importance of cautious selection of employees, with a view to minimizing the accidents and disease arising from the employment of irresponsible, incapable, and undependable individuals. Similarly, it is possible that seeing the connection between the cost of health insurance and the possibilities of reducing it thru education, the community

will find more sincere and earnest incentives to stress the preventive phases in health work, closely interwoven in the fabric of social insurance.

Employers, employees, hospitals, and the organized medical profession may dissect any single legislative act and find flaws which loom large to them. That portion of the community which comprehends the theory of social legislation and particularly health insurance is constantly increasing. There is a slowly crystallizing opinion that the merits of compulsory health insurance will far outweigh its disadvantages. It is difficult to dislodge group consciousness and supplant it by state consciousness. The trend of society at present is making the mass paramount and subordinating the interests of the classes to the welfare of the state.

Only a comparatively few years have elapsed since there was marked opposition to the introduction of medical inspection into the schools under municipal or state auspices. Systems of visiting nursing have developed despite vigorous objections. State and municipal diagnostic laboratories are growing in number, regardless of the interests of specific portions of the community. These are but growing evidences of the belief that the conservation of health is an end to be achieved without regard to the effect it may have upon those whose lives have been consecrated to curative medicine. Today, there are few who oppose an educational system, organized and directed by state authority. It is an example of beneficent paternalism that is not malign, nor is it regarded as abrogating the rights of families or destroying their independence.

Is health insurance possibly to be regarded as based upon a theory that health

is a matter of state concern? To many, state medicine is anathema, viewed with distrust, and to be opposed with the utmost vigor and indignation. There is marked opposition to health insurance and it is proper that arguments should be voiced and penned on both sides of this important subject. It would be exceedingly helpful, however, to note greater freedom in discussion on the theory of it. If the theory be sound, then the form of the law is a matter of practical detail and adjustment to satisfy the demands and interests of all groups concerned, as far as may be possible. If the theory be unwise, dangerously radical, inimical to the progress and development of the welfare of the state, there should be less agitation against the merits of particular bills and more concentrated attack upon the theory underlying it.

Health insurance must be viewed as a factor in promoting social welfare from the standpoint of economics, education and health. If the potentialities of health insurance appear too feeble to promote public welfare in these three particulars, it is unsound and undesirable. If, however, health insurance is an essential factor for securing these ends, it is merely a matter of time before some law will be made uniformly available thruout the country.

Explosives and Disease.—The damaging effects of explosives upon human beings and their possessions have been well evidenced in modern warfare. The expectation of death and injury thru the instrumentalities of war is recognized by belligerents and indeed the hazards are by no means unappreciated by those whose lives are confined to civil employment. Explosives are dangerous to use and hazardous to manu-

facture. The characteristics of the industrial poisonings resulting from present methods of manufacturing explosives are inadequately understood.

Alice Hamilton (*Monthly Review of the U. S. Bureau of Labor Statistics*, February, 1917) gives a resume of an investigation of 40 munition plants of the United States together with the nature and character of the poisonings which have occurred to employees during the period of busy time given to fulfilling contracts for high explosives and bursting shells.

The making of explosives is practically a new industry in the United States, and as a result there are few long established factories devoted to this purpose. As perhaps is natural, under the impulse of haste to satisfy huge contracts, plants have been erected with inadequate facilities for the protection of the employees from the industrial hazards which probably had not been foreseen or could not be anticipated. While the industrial managers were grappling with their new problems, the medical profession also was coming in contact with conditions totally new. Consequently, numerous occurrences of cyanosis, syncope, edema and toxic conditions were unrecognized as being due to the hazards of the new occupations.

Dr. Hamilton points out that it is not possible to ascertain how much occupational disease has been caused by work in this industry since the war began. Even where firms employ physicians to take care of the men, the visits are only occasional and the protection of the employer too frequently precludes clear thinking as to the cause of the illness of employees. Even in plants where the medical care given is excellent, records frequently are lacking and detailed information is impossible. Fortunately, 19 out of 40 plants visited were under the

charge of careful physicians, who kept full records and personally attended most of the victims of occupational poisoning. The fact that there were 2,504 cases of industrial poisoning and 50 deaths during one year in 28 explosive-making plants indicates the seriousness of the problem confronting the community.

The main source of danger lies in nitrogen oxide fumes, produced during the process of nitration, which is common in the manufacture of practically all of the high explosives. The two explosives that give the most serious poisoning from nitrous fumes are nitrocellulose and picric acid. Trinitrotoluene or TNT, as it is commonly called, irritates the eyes, the nose, the throat and the bronchial tubes and particularly the gastro-intestinal tract.

The early symptom of a distaste for food is soon followed by griping pains, headaches, nausea, sometimes vomiting, constipation, and, more rarely, diarrhea. These simple symptoms are different from those where sudden acute fatal poisoning occurs with cyanosis, convulsions and coma.

It is unnecessary to specify the particular types of poisoning due to working with nitroglycerin, fulminate of mercury, sulphuric ether, benzene, phenol, picric acid, and nitrogen oxides. The most important fact is that whether or not this industry is to be permanently established in this country, steps must be taken at once to secure the prevention of these types of industrial poisonings. Physicians resident in neighborhoods where high explosives are manufactured must become familiar with the earliest detectable symptoms. Hours of labor must be standardized within reasonable limits, so as to subject no man for an undue time to the deadly effects of the dusts and fumes. Plants must be overhauled and exhausts provided to permit the escape of

fumes that cannot be prevented by the tight closing of kettles. Vacuum cleaners, or sprinkling before sweeping systems should be installed in addition to the systematic provision of exhausts for carrying off the noxious dusts from machines producing them. Obviously, dust is particularly dangerous because it may be swallowed, absorbed thru breathing, and interfere with the ventilation of the skin. Thus far respirators have failed to be effective in protection, partially because employees cannot be forced to wear such articles continually. As a matter of fact, experience has shown that even where the employees do follow the rules, the respirator cannot be depended upon to protect him effectively.

Personal cleanliness is essential, while frequent bathing, change of clothing, and hand washing before eating, lunching and resting in rooms in which no poisonous process is permitted are necessary for lessening industrial hazards. Long hours of work or overtime should be forbidden as fatigue is recognized as a factor in undermining resistance. Inasmuch as the most serious effects of the toxic agents are spent on the lungs and kidneys, employees with diseases of these organs should not be permitted to engage in work involving the use of the trade poisons. Similarly, alcoholics should not be employed in the handling of any of the poisons involved in this industry.

Furthermore, two other preventive measures are essential. Employees themselves should be made cognizant of the dangers to which they are exposed and should be thoroughly instructed as to the dangers of the sicknesses possibly arising and the methods of protecting themselves against them.

Every factory should have a physician, not merely as a consultant but as a regular visitant, making rounds daily or more

frequently, with a view of picking out the incipient "cases" whose health and lives may be protected by prompt removal from the occupational hazard. Such a physician should be clothed with unusual powers and be authorized to take whatever steps are necessary to protect individual employees or to suggest and institute reforms necessary for the protection of any particular group of process workers.

Dangers Attending the Manufacture of Explosives.—Every new industry bears in its wake new conditions. There has been no industrial development in this country involving the handling of more poisonous substances than the manufacture of explosives. The mere list of substances used or developed directly or indirectly indicates the seriousness of this industry in any community. Picric acid, nitroglycerin, trinitrotoluene, tetranitranilin, nitric acid, sulphuric acid, phenol, methyl alcohol, chlorine, oxide of nitrogen, sulphuric ether and sulphuric dioxide, constitute the main substances utilized in the production of explosives.

The symptoms to which they give rise vary from the mere choking and irritation of the throat to the development of severe "fume sickness" resulting in bronchopneumonia or a rapidly progressing congestion of the lungs, accompanied by a fatal edema. Respiratory disturbances, gastro-intestinal irritation, affections of the kidney, nutritional disorders, severe degenerations and destruction of the blood, disorders of the nervous system, and skin eruptions arise in countless variety according to the toxicity of particular chemicals, the susceptibility of the employee, the degree of exposure, and the duration of the contact.

The field of industrial poisoning has been enlarged. Its pathology is better known

than its symptomatology. Its symptomatology is more frequently recognized than its etiology. It becomes necessary, therefore, to call the attention of the profession to the existence of these important medical problems in order that they may be fully prepared to cope with the situation and to advise constructive measures for their relief and prevention. Surely the hazards of war attend the making of munitions. The safeguard against the dangers of industrial poisoning must be found in the intelligent, scientific and painstaking efforts of the medical profession, as a whole, and particularly those of its members who reside in communities harboring factories making high explosives.

Maternal Mortality.—Organizations in France, Germany, and England are busying themselves with the problems of repopulation. The grave questions of eugenics are receiving decreasing attention in the light of the demand for more children.

The United States at present is having its attention fixed upon the methods of conserving childhood. At the inspiration of the Federal Children's Bureau, Baby Week is being urged as an annual period of demonstration of the necessity of organized effort to minimize the dangers to infancy and childhood. Thruout the length and breadth of the land earnest efforts will be made during the early part of May to present to the public constructive programs for decreasing infant mortality. This year there is unusual significance attached to this organized endeavor to arouse public interest in infant welfare. It is beyond question that the future of the country lies in its infant population and every plan devised to foster the development of children must redound to the advantage of the nation.

In connection with this infant welfare movement there will be urged the value of prenatal care, enhanced obstetrical facilities, milk stations, home nursing, improved midwifery, medical inspection of schools, instruction in home economics, training for motherhood, the importance of maternal nursing and countless other important phases of the work recognized as counteracting the hazards of being a child.

Campaigning of any character requires time, money, and intelligent effort. Preparations for Baby Week should now be under way in order to secure the intensive cooperation of child saving agencies. Surveys of the needs of communities should be made; the particular wants of each section of a city should be charted and a constructive plan outlined to secure adequate remedies to cure the defects noted.

A Most Regrettable and Needless Toll.

—Instead of a general celebration with prizes awarded for the best looking child, the best natured child, the fattest child, the most attractive baby carriage, and the proudest parent, there would be greater advantage in rewarding the best plans of attacking specific problems which hold greater interest for the entire population. It would be well this year, for example, in large cities to focus attention upon maternal mortality with a view to altering the conditions now exacting a most regrettable toll. According to a bulletin on Maternal Mortality issued by the Children's Bureau, at a conservative estimate, over 15,000 women die annually from diseases incident to pregnancy and childbirth. It is almost unbelievable that during 1913 *child-birth caused more deaths among women, fifteen to forty-four years of age, than any disease except tuberculosis!* The impor-

tance of this is further emphasized by the fact that puerperal septicemia has apparently not decreased despite the improvement in antiseptic methods and obstetrical technic during the past twenty-three years. While the death rates from typhoid fever, diphtheria, tuberculosis, pneumonia and the contagious diseases have been gradually declining, the death rate from childbed infections has remained practically constant.

The necessity for the immediate consideration of this serious problem is impressively heightened by the fact that *the death rate per 100,000 population from deaths caused by pregnancy and confinement is higher in the United States than in almost any other civilized country on the face of the globe.* This rate for the years 1900-1910 was 14.9 for the United States as compared with 6.0 for Sweden, 8.1 for Norway, 10.3 for France, 11.1 for England and Wales, 13.3 for Japan, 14.8 for Belgium.

Higher standards of care are essential for the protection of potential mothers and for their children, unborn and born. The problems of counteracting the general ignorance of the inherent difficulties and dangers of pregnancy and labor, and of the need for proper hygiene and carefully supervised nursing to prevent them, require solution. Difficulties in the way of providing adequate care vary in the city and the rural districts, but the situation must be met frankly and systematic efforts must be made in order to change the existing state of things.

Maternal mortality is a particular responsibility of physicians and their contribution to the Baby Week campaign might well be the discussion and formulation of plans to aid in decreasing this reproachful loss of mothers.

The Nurse as an Anesthetist.—The use of nurses as anesthetists has been a subject of much importance. Many have been opposed to this procedure on the ground that the administration of an anesthetic requires the technical knowledge of the trained physician. Despite this belief, however, there has been a gradually increasing practice in hospitals to utilize a trained nurse for this specific service.

A decision by the Attorney-General of Pennsylvania, quoted in *The Modern Hospital*, Feb., 1917, points out that the administration of an anesthetic is clearly within the functions of a trained nurse. At the present time nurses may administer drugs of all kinds, give hypodermic injections, give prescribed remedies when required for emergency treatment, dress injuries under direction, and perform a large variety of other duties under the supervision of an attending physician or surgeon. If it is possible for a nurse to give morphine and similar narcotics under physician's orders without exceeding her legitimate field of work, there is little reason to believe that she is infringing upon the rights of medical men in giving an anesthetic at the direction of a physician. The nurse is an assistant and she may lawfully administer such remedies as are prescribed by the physician whom she assists. The mere fact that an anesthetic produces unconsciousness or insensibility to pain does not alter the character of the service performed, because various other drugs may be employed to secure the same result tho in other ways.

The anesthetist necessarily must be highly trained in order to safeguard properly the welfare of the patient, but this does not create an assumption that his duties form an essential prerogative of physicians. The licensure of physicians is not designed to

protect the medical profession against competition, but purposes to protect the public against incompetent and illegal practitioners. The mere fact of being licensed to practice medicine does not carry with it a monopoly of the rights to administer drugs nor indeed to treat the sick. The fact that Christian Scientists and drugless healers are privileged to care for the sick indicates a wider freedom in the care of the public than is usually recognized.

It obviously is not illegal for a nurse, who has received training fitting her for the administration of an anesthetic, to make use of this knowledge at the direction of a physician or surgeon. The main fact of importance is the desirability of securing trained anesthetists. If the general public realizes the importance of anesthesia it is more concerned in the ability of the anesthetist to perform the duties efficiently and safely than it is in having a physician serve as the anesthetist.

Other things being equal, it is obviously true that the physician should be the more thoro and efficient anesthetist, but while any young physician, regardless of his experience, is accepted by the profession as capable of administering an anesthetic, there is little reason to find fault with institutions which take advantage of trained nurses with large experience in this field of work. The patent solution of the problem lies in the specialization of a larger number of physicians in this field of medical practice. When a group of physicians have impressed themselves upon the community as possessing unusual training in this particular, there will be little reason to inquire as to the legality of the nurse-anesthetists; and if they are employed it must be because the profession finds them particularly efficient.

The introduction of nurse-anesthetists

thruout the country is the result of a failure of the profession to establish the giving of anesthetics as a phase of practice meriting careful study and warranting specialized training. Our medical schools and our hospitals alike must share the responsibility for the development of the nurse as a competitor in the field of anesthesia.

The Custodial Care of the Feeble-Minded.—The facts concerning feeble-mindedness grow in number and seriousness. To quote the words of Walter E. Fernald of the Waverly School for the Feeble-minded, "the problem of the mental defective in the home, the school, the street, the police court, the jail, the brothel, the pauper asylum, constitutes one of the great sociological and economic questions of modern times."

It is unfortunate that medical aspects of feeble-mindedness thus far promise very little in the way of cure of the cerebral defect underlying feeble mentality. It is true, however, that the presence of the feeble-minded in the community creates a large number of medical problems, particularly those related to obstetrics, venereal diseases, ophthalmia neonatorum, infant mortality, epilepsy, alcoholism, and kindred bodily disturbances, directly or indirectly dependent upon defective organization and impoverished nutrition.

The total number of feeble-minded individuals has never been accurately determined thru a census. Assuming as correct an approximation of one feeble-minded person to every 300 individuals in the community, there are at least 33,000 feeble-minded individuals in the State of New York.

From the standpoint of communal pro-

tection and in line with rational eugenic thinking, it would appear to be imperative to secure permanent custodial care for a large proportion of these unfortunates, who not alone are handicapped for their own progress, but constitute a serious hazard to the betterment of the state. Illustrative of our indifference to the facts revealed by those who have investigated charitable and correctional institutions stands the lack of accommodations for the care of the feeble-minded in the State of New York. This condition, however, is merely indicative of the status of the problem in most of the states of the Union.

There are at large in New York State 23,000 feeble-minded persons, for whom even inadequate provision is lacking, several thousand of whom at least should be segregated for the protection of themselves and the community. There are almost as many feeble-minded persons in prisons, jails, reformatories, and almshouses, where they do not belong, as there are in the state institutions actually designed for their care. The institutional provisions for the mental defectives are thoroly inadequate and are yearly running behind the reasonable needs of this type of the population. There is no single anti-social part of the community which more seriously impairs the development of the state and positively serves as a destructive force in racial betterment, than the dysgenic feeble-minded group.

Many believe that the accumulation of facts carries with it the force of argument for securing remedies for the unsafe, the insanitary or the pernicious diseased groups in the community. The numerous questions involved in securing adequate custodial care for the feeble-minded serve to refute this idea. The facts are well known. The methods of control are understood, the

mode of humane segregation and education have been systematized, and are growing in variety and in value. Despite these matters of common knowledge, a square deal for the feeble-minded has not been secured. Many of them are receiving treatment totally unjust and involving the wastage of time, money and effort. A larger group is suffering from serious indifference and neglect.

The communal responsibility is not decreased by any extenuating circumstance, but is heightened by a wide knowledge of the necessity for providing ample accommodations for this public incubus and private burden. The feeble-minded present an immediate problem which cannot be evaded by closing one's eyes to their existence.

From the standpoint of practical value in securing remedies for communal hazards of this character, resolutions by medical societies demanding legislative action in the interests of the public health and racial betterment would be a pronounced service. Here is a practical problem meriting the consideration of the organized medical profession.

Medical Inspection of Employees.—

The movement for annual physical examinations gains in force. The idea is sweeping over the country and is making its appeal to all types in the community. In connection with workmen's compensation acts, employers' liability laws, health insurance, there is an awakening on the part of employers and employees as to the practical commercial value of physical examination. The extension of medical supervision to factory employees is meeting with favor and many large institutions have established elaborate plans for supervising the health of employees.

According to W. Irving Clark (*J. A. M. A.*, January 6, 1917), a factory medical department has five specific functions.

1. To make physical examinations of all prospective employees, and reexamine all defective employees.

2. To treat accidents immediately after they occur—and subsequent treatments.

3. Examining and advising cases of sickness.

4. The control of sanitation thruout the works.

5. Health publicity.

It is important if physical examination of prospective employees is to be practiced that considerable care be exercised in making rejections. It is undesirable that applicants for work should be debarred from all employment because of physical disability. The report of the medical inspector should indicate the character of the disability and the rejection should be made by the employment manager after thoughtful consideration as to the possibility of employing the applicant in some department of the factory other than the one for which application had been made.

It is unfortunate that Clark takes the position that all applicants over forty-five years of age are arbitrarily rejected. There is no medical basis for this arbitrary recommendation. Some men at forty-five are younger than other men at thirty, and to establish forty-five years as the line above which health and physical power are lacking is irrational. It is manifestly unfair to penalize workingmen who have matured. In factory life, for example, the full measure of experience necessary for certain processes requiring long years of training may not be reached until the fourth decade.

There are few individuals so physically perfect as to escape from the hands of a medical inspector without some defect being discovered. Clark reports twenty men over the age of forty-five having defects of the eyes, or the ears, or the heart, and other defects which would have been sufficient to

debar them even if their age had been under thirty-five. If the defects themselves were made the basis of rejection no fault could be found with the medical certification, but to base the medical rejection on the ground of age alone is thoroly unscientific. In so far as health is concerned, it is true that there is an increasing risk of illness and likelihood of death, but these are not sufficient to serve as bars to life insurance nor should they interfere with employment.

Attitudes of this character tend to create suspicion in the minds of workers as to the honesty of physical examinations. Even tho few recommendations for non-employment be made on the basis of age, it is undesirable that workers should be under the impression that disbarment is of more importance than the conscientious investigation of their physical welfare with systematic effort to improve their physical condition, correct their defects, and prevent the occurrence of illness and accidents.

There are too many advantages to be gained in establishing complete confidence between employees and the medical examiners to permit distrust to rise as to the point of view of the examiner. His report should be accurate, detailed, and suggestive. His recommendations and advice should constitute a valuable aid to the employee and to the employer. His interests should include the welfare of the applicants examined or the employees reexamined just as much as that of the employer.

Periodic reexaminations will not gain in favor if it becomes evident that the development of a defect will result in the recommendation of the examiner that the employee be dismissed or transferred to another department in which perhaps a lower wage scale prevails.

It is exceedingly important that the medical inspector in an industrial establishment should perform a sanitary service to the employees thru recommending and, in so far as possible, securing the abandonment of unsanitary conditions and the establishment of conditions protecting the health and welfare of the workers.

The distribution of educational leaflets on the various subjects of hygiene and general health does not suffice to counteract a lack of toilet facilities and washrooms, nor will it in any way serve as an antidote for vitiated atmosphere, lack of light, room overcrowding, or an insufficiency of safety devices. The prevention of sickness is not assured thru the physical examination of employees when unhygienic factory conditions continue to exist, together with overwork, underpay and inadequate arrangements for promoting industrial health.

There is greater reason for arbitrariness in arriving at decisions affecting the general health of groups of employees than in establishing arbitrarily the age of forty-five for the medical rejection of applicants for work.

Obsolescent Drugs.—In the development of therapeutics there have been proposed at various times numerous medications for the purpose of treating conditions believed to arise from uric acid retention. The large number of drugs to which has been attributed value as urate solvents attests the lack of scientific information as to their actual worth.

For many years piperazin has been credited with marked solvent properties and has been recommended for the purpose of preventing the formation of calculi in the so-called uric acid diathesis. It has been known that after ingestion, piperazin is partially oxidized but a considerable pro-

portion is eliminated unchanged. This theoretic action was believed to arise from the formation of a soluble urate of piperazin, in which form elimination of the uric acid occurred.

Careful clinicians have frequently doubted the efficacy of this drug but its real virtues have not been thoroly determined thru investigations to determine its real claims of therapeutic favor.

Hanzlick (*Journal of Laboratory and Clinical Medicine*, February, 1917), reports a careful study of the literature relating to the subject and arrives at the conclusion that there exists no satisfactory or reliable evidence to show that piperazin in therapeutic doses increases the excretion of urates. It is true that large doses of the drug produce a slight increase in uric acid excretion but no more so than may be secured thru the administration of such alkalies as bicarbonate and citrate. "The solvent action of low concentrations of piperazin on calculi is practically negligible." "There is no reliable evidence to indicate that piperazin can prevent or remove urate deposits."

On the other hand, there are various reports in the literature that the administration of piperazin has been attended by albuminuria, urticaria, collapse, muscular weakness, tho clinical observers have stated that in therapeutic doses its administration is followed by no symptoms of any kind.

The reaction from empirical therapeutics, unsupported by laboratory experiments, tends to create therapeutic nihilism. On the one hand appears the generous credulity which accepts at full value the claims made for every drug introduced; and on the other hand arises an intolerant scepticism which rejects without further inquiry every medicinal agent without consideration of the facts

tending to prove its definite value. Obviously, neither position is rational. Both represent phases of scientific intolerance. Both represent an intolerance of reasoning. Both types of medical mind reflect a lack of mental poise and unbalanced judgment.

Clinical data possess definite value in determining the usefulness or worthlessness of alleged curative drugs. Unfortunately, the logical fallacy of *post hoc ergo propter hoc* too frequently follows the interpretation of clinical results after the administration or application of therapeutic agencies. Experimentations upon animals are not necessarily conclusive, tho the results are highly suggestive when uniform results are achieved in successive experiments and when controls are utilized so as to make the basis of comparison sufficiently effective. Experiments *in vitro* may cast light upon lines of therapeutic action, but most generally fail to serve as supportive evidence, owing to the absence of the physiological environment necessary for drug testing. Laboratory experimentation, with all the modern appliances now available, together with clinical testing and observation, and the summation of reports of personal experience in a large number of cases serve as an excellent and scientific check upon remedies of all kinds.

It is essential for therapeutic progress that the physician should maintain an open mind upon therapeutic questions and welcome the advent of new drugs in the hopes that the proving of their worth may result in acquisition of permanent therapeutic aids. The mere fact that the *modus operandi* has not been discovered is insufficient to warrant the rejection of any drug whose value appears to be determined by clinical experience. Were this not true quinine and mercury could have been rejected for

lack of proof as to their methods of overcoming malaria and syphilis.

It is equally true that physicians should be willing to reject agents whose therapeutic worthlessness has been established. It is difficult to break with traditions in the fear that by so doing some valuable drug may be cast out. It is apparent that the decennial revision of the list of official drugs indicates that opinions alter as to the relative merits of particular drugs as the decades pass. There is every reason to believe that concerted endeavors to eliminate therapeutic agents of doubtful value would result in the distinct gain to practitioners and patients. After all, this is "a consummation devoutly to be wished for."

Compulsory Health Insurance Legislation.—Elsewhere in this issue will be found Dr. John P. Davin's earnest address before the Judiciary Committee of the New York State Senate, in which, as the duly authorized agent of the Medical Society of the County of New York, Dr. Davin strenuously opposed the bill for compulsory health insurance. We are very glad to print this address, not because we are in accord with all of Dr. Davin's views, for frankly we are not, but because we believe a subject so important to all concerned cannot be too freely discussed. The truth is what we seek, and in order to learn the truth, we must have the views of those who oppose the proposition as well as of those who advocate it. AMERICAN MEDICINE is committed to the principles that every physician is entitled to his honest beliefs, and that both sides of any question concerning the medical profession have equal rights to a hearing thru its pages. No man has a monopoly of the ability to think rightly, and one man's opinion is as

deserving of respectful consideration as another's, until it is proven to be wrong. Therefore, while those charged with the direction of AMERICAN MEDICINE may hold very definite views on the important problems of the day, we aim nevertheless to keep free from bigotry, prejudice and intolerance, and never allow these faults to be reflected in the pages of this journal.

To return to the question of health insurance, we do not hesitate to say that the theories on which it is based appeal to us in many ways. We believe any proposition that holds any promise of social progress is deserving of our thoughtful consideration, and to the extent that this promise is made good, to that extent we intend to give it our earnest support. It is our purpose, however, to make sure that the good promised is real and substantial, and for this reason we want to learn all there is to know, both for and against this movement for compulsory health insurance.

As we have just said, there is much that is attractive in the theories of the project. On the other hand, there is much in the proposed plans for carrying them out that seems objectionable. This is always the situation in inaugurating any new movement having any intimate relation to the social, economic or political details of our everyday life. To perfect a movement and raise it to its highest efficiency is always a matter of evolution, of painstaking study, of intelligent construction. For these reasons we earnestly plead with the physicians of the state and country not to remain indifferent to this problem of compulsory health insurance, or because of antagonism to hold aloof from its discussion. Undoubtedly, the socialization of medical practice is bound to come to a greater or less extent in the near future. The "handwriting on the wall" ad-

mits of no other interpretation. As a detail of this trend of medicine, compulsory health insurance in some form is sure to be established sooner or later. If medical men take an active part in the consideration of the presenting problems, they may reasonably expect, not only to protect the legitimate interests of the medical profession, but also to exact maximum benefits from the movement. There is no other class that strives more faithfully to serve the best interests of humanity than medical men. To insure the highest efficiency from health insurance—in the directions, for instance, of improving home hygiene, of increasing prophylaxis, and so on, as medical men have so long been striving—we must have a real influence in helping to decide the form it shall take, and the ways in which it shall be put into practical effect.

If compulsory insurance is good, a real step forward, and a benefit to humanity, full study and discussion will bring these facts to the front—and it will live. If it is pernicious, harmful in its influence, and a menace to the welfare of a class as useful and essential to the community as the medical profession, full study and discussion will likewise establish these facts—and it will die. In other words, the fate of compulsory health insurance will be decided by the determination of the true facts concerning its worth or worthlessness.

Let us medical men do our duty, therefore, and by discussing the proposition, openly, temperately and earnestly, hasten the determination of the true facts. In no other way can we do more to serve the people and incidentally safeguard our legitimate interests.

One thing is certain, if we neglect our opportunities, we shall have only ourselves to blame if our interests are ignored.



The Selection of Surgeons by the Hospital.—“In the selection of a surgeon for the staff of a hospital,” points out S. S. Goldwater in a recent issue of the *Modern Hospital*, “trustees may be unduly impressed by popularity. A surgeon rarely acquires a large clientele unless he is competent to operate, but the most popular surgeon is not always entitled to hospital preferment. A surgeon whose private practice is so large as to exhaust his time and energy cannot be expected to be punctual in attendance on the wards, or to be deliberate, careful and thoro in examining ward patients. This is the type of surgeon who sees his patient for the first time in the operating room, and who is content to leave diagnosis and other preliminaries in the hands of the house staff. Such a surgeon may be entirely willing to give his best service to the hospital, but he is not in a position to do so. The function of the hospital is a dual one—first to care for its patients, and, secondly, to contribute to the advancement of medicine. No hospital may rightly neglect either of these functions. A surgeon who is so preoccupied by private practice that he cannot interest himself in research work, cannot train his assistants, and cannot cooperate freely with the laboratory staff, is one whom the hospital can afford to pass by.”

The Toxemias of Pregnancy.—“There has been some considerable effort made during the last decade,” points out Andrew B. Somers in the *Medical Herald*, (March, 1917), “especially among laboratory men to find an underlying cause for the toxic conditions of pregnancy that at times assume such alarming proportions with very little warning. The facts are that pregnancy is the primary cause in all these cases but there are numerous secondary causes that are so important that it does not do from a

clinical standpoint to disregard them. These conditions are the increased demands made on metabolism, oxygenation, innervation, circulation, and elimination by pregnancy. If all women were physiological beings, these demands would be readily met, but as they are not physiological beings, pregnancy tests the points of least resistance and thus the individual insufficiencies, be they what they may, appear and we have a hydra headed monster instead of a specific condition affecting all cases alike.

In one case there may be disturbed kidney function, in another disturbed metabolism, in another unstable nervous conditions, in another disturbed circulatory system. In one case there will be dropsy with pathological urinary findings, in another serious disorders of digestive apparatus, in another insomnia with a line of nervous symptoms terminating in convulsions, in another high pulse tension with accompanying complications, in another a complex condition involving two or more of the conditions mentioned and as a result there is no uniform plan of treatment applicable to all cases and the clinician must discriminate with a great deal of intelligence in his management of an individual case."

When to Operate in Stomach Diseases.—"The indications for operation on the stomach," states Harry Friedenwald in the *Maryland Medical Journal*, (Nov., 1916), "are as follows:

1. Obstructions, whether at the cardiac or pyloric orifices. Gastrostomy is indicated in impermeable strictures of the cardiac orifice or of the esophagus, and gives great relief until the stricture can be dilated; it prolongs life in cases of carcinoma of this region. Operation is always indicated in obstruction of the pylorus, whether the obstruction be due to simple pyloric stenosis or due to cancer. In cases of benign obstruction, the operations indicated are pyloroplasty, gastroenterostomy or pylorotomy; in malignant disease pylorotomy is indicated for cure and gastroenterostomy for relief.

2. Gastric ulcer. Simple uncomplicated gastric or duodenal ulcers do not require operation. Operation must only be considered when there are complications or when

the ulcer has resisted a thoro medical cure.

The indications for operation are perforation, pyloric obstruction, and ulcers defying thoro medical cures. The surgical procedures which may be undertaken are excision of the ulcer, pylorotomy, pyloroplasty, or gastroenterostomy. The exact procedure to be followed must be determined by the surgeon at the time of the operation.

3. Gastric carcinoma. There is but one cure for cancer of the stomach, and that is operation. This can be accomplished only, however, when the diagnosis is made early. Inasmuch as early diagnosis is usually most difficult and often impossible, it is wise to urge upon all individuals over forty years of age who manifest symptoms of indigestion which are not relieved by a few weeks of treatment the need of a most critical examination, and if the diagnosis still remains doubtful, of exploratory incision. It is by this method alone that cases of carcinoma of the stomach can be determined early, and at that stage when cure is still possible; otherwise the operation can only be in the nature of relief—gastroenterostomy for relief of obstruction—but not of cure."

Adrenalin with Salvarsan Therapy.

Beeson in the *Medical Review of Reviews* (December, 1916, p. 881) urges the injection of adrenalin chloride solution to control and also to forestall salvarsan or neosalvarsan accidents. Flushing of the face during a salvarsan injection is indication for stopping the treatment at once and giving one milligram (1 mil. of a 1:1000 standard solution) of adrenalin by deep intramuscular injection. In cases in which there is a tendency to the so-called "nitroid crises" accompanying salvarsan treatment, Beeson recommends a preliminary injection of adrenalin.

The dose recommended is rather large but is said to be harmless. It is given ten minutes prior to the salvarsan. Shortly after this preliminary treatment the patient becomes quite pale if the adrenalin is working properly; the pulse increases to 100 or 120, there is more or less trembling and quite a deal of pain at the site of the injection; but these by-effects are fleeting and the procedure is a decided preventative of the untoward results of salvarsan.



AFTER CARE OF INFANTILE PARALYSIS.

BY

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Treatment in the aftercare of infantile paralysis should consist of the judicious employment of rest, heat, massage, electricity, muscle training, brace supports and operations. In this paper those cases only are considered in which the acute process has subsided and repair is taking place.

Too energetic treatment in the first few months following the infection is generally recognized among orthopedic surgeons as detrimental. The anxiety of the parents to see that everything is being done at as early a time as possible tends to force the judgment of the surgeon. The seeming confusion of ideas of treatment in the midst of such an epidemic as we have just experienced in New York and vicinity, together with the mystery of the source of this danger, has brought about a sort of panic in the minds of the laity, which has been stimulated by the many fanciful theories published in the papers. The epidemic being over, it now rests with the orthopedic surgeon, with his wide experi-

ence in treating crippling and deforming conditions to protect these cases from deformities resulting from the disarrangement of the normal muscle balance, conserve the remaining muscle power and develop it.

In the following descriptions of the various deformities resulting from infantile paralysis I will endeavor to present the definite deformity with the definite cause and the definite method of procedure for its correction; not theoretical methods of correction but the particular method for the particular deformity which has been proven to be the best by actual application in the experience of an extensive practice in deformity work. All the illustrations in this paper are taken from my own work and are based on observation and treatment of over a thousand cases.

Rest—Physiological and Mechanical.—

Maintenance of the proper position of the limbs and prevention of overtire and strain of the weakened and impaired muscles are of the greatest importance. Good judgment is necessary in choosing the proper method of applying rest and protection. Various methods have been used which are open to criticism from different standpoints.

With the object always before us of providing rest and protection to the affected muscle, or groups of muscles, care must be

taken that such rest and protection are not detrimental to the unaffected muscles. While there is no possibility of restoration of actually destroyed motor cells, yet those temporarily inactive during the acute inflammatory process will be restored after the acute condition subsides. We must also take into account the possible function

unaffected portion of the muscle receiving impulses transmitted by normal motor cells thru anastomosing nerve filaments.

It is rational to protect the weakened muscles and proportionately retard development of opposing but unaffected muscles by mechanical or other means until the greatest possible compensation towards muscle



FIG. 1.—Paralysis of adductors and extensors of the thigh, with the habitual faulty position of flexion and external rotation of the thigh and leg when untreated.

to be derived thru filaments from other unaffected anastomosing nerve roots which are included in the nerve cables distributed to the affected muscles, such as muscles not totally paralyzed but only weakened, due to the loss of certain tracts in the nerve cable from the cord to a certain number of nerve terminals in the muscle bundles. the



FIG. 2.—Case illustrating paralytic dislocation of the hip before treatment, of child aged 11, having been paralyzed when 4 years of age. Hip slips in and out easily. Note the obliquity of the superior rim and shallowness of the acetabulum, due to pressure of and the constant dislocating of the head.

balance is restored, but by an indiscriminate use of braces in the endeavor to bring about such a result much actual harm may be done to the muscles remaining unimpaired, as well as to those partly paralyzed, by putting out of action perfectly well balanced groups by their inclusion in braces.

Improperly constructed and poorly fitted braces, whose bands constrict and press into the muscles, cause pressure atrophy by interfering with their proper nutrition. Clumsy and impracticable appliances, which restrict the whole body from getting

constructed and well fitting apparatus in the conduct of the after care of these cases are: *first*, to prevent impending deformity, and *second*, to assist the child to walk and as an



FIG. 3.—Same case as Fig. 2 after treatment. Note the deepening of the acetabulum and re-shaping and protruding superior rim. Also note the amalgamation of the graft which was implanted just above the rim for the purpose of holding the rim down in position. In conjunction with this the lax capsule was reefed without entering the joint. Firm joint—full motion 2 years since the operation.



FIG. 4.—Illustrating case extensively paralyzed in both lower limbs, flexion contracture of the left knee and genu recurvatum of the right.

the necessary general exercise and render the patient difficult for the attendant to handle, causes the discarding of such treatment and leads to the neglect of the patient.

Braces.— *Every child because it has poliomyelitis does not require a brace.* The two chief reasons for the employment of simply

aid and encouragement in using the limbs properly. To encumber the already weakened patient by heavy, clumsy, hampering appliances, poorly adjusted, is adding a burden which impedes rather than facilitates the early restoration of the proper development and control of muscle power.

Many of these cases by proper management thru massage and muscle training will acquire far better and quicker control of



FIG. 5.—Illustrating case of flail knee with a suitable brace with no joint at the knee, holding the leg in perfect correction.

the limbs without resort to braces. It rests with the surgeon to exercise caution and proper judgment in each individual case. Many cases have come to my attention

where apparent paralysis has existed for several years and the patients have shown no ability to use the muscles, but by judicious rest and relief from strain from the overacting opposing healthier muscle groups, proper balance of power and function have been restored. As an example I might quote the case of a boy ten years



FIG. 6.—Roentgenogram lateral view of a case 14 years of age taken two years after fixation operation, using the patella as the ankylosing graft. This was a case of extreme genu recurvatum. The operation has enabled the child to walk without braces, which was not possible before.

of age who had the initial infection when four years of age, resulting in the paralysis of the dorsi-flexors of the foot, and in consequence marked foot drop developed. Upon examination I decided that the lengthening of the tendo Achillis was indicated to

relieve the foot drop and bring the foot to a right angle so that the child could reach

made an attempt to correct the deformity by forcibly stretching the calf and placing the foot and leg in plaster of Paris. In



FIG. 7.—Case .8 years old having had the infection when 3 years of age. Illustrating the extreme deformity of varus, and supination of the foot, with displacement of the foot inward. The astragalus is firm in its normal relation with the malleoli. Paralysis of the peroneal group, with some involvement of the extensor longus digitorum. Case operated in two stages. Forcible stretching with bone graft arthrodesis of the scaphoid to the astragalus, followed six weeks later by lengthening of the tendo Achillis and the fixation of the tendons of the peroneus brevis and longus to the external malleolus as additional external lateral ligaments.

the ground with his heel. Finding that the patient had a bad heart lesion it was deemed unwise to give a general anesthetic and I



FIG. 8.—X-ray of foot in Fig. 7 corrected showing graft in position. This was a dove-tailed graft introduced across the astragalo-scapoid joint thru a dorsal incision along the line of the anterior-tibial tendon. The graft consists of full thickness of tibial cortex and was implanted with periosteal surface flush with the adjacent bones.

four stretchings at three week intervals the foot was corrected and the boy began to use the supposedly paralyzed extensors of the toes. Muscle training was begun and he made an excellent recovery, acquiring

practically normal flexion and extension of the foot. Some of these extensively paralyzed cases will by judicious massage and muscle training acquire the ability to manage a practically paralyzed limb much better and more quickly without braces.

For example, a leg which has both extensor and flexor groups controlling the

ing stability can be done, one is pursuing a better course than by the use of braces. The restriction of braces in such a case only adds further atrophy and possibly destroys muscle fibre which if unconstrained might become partly or completely restored.



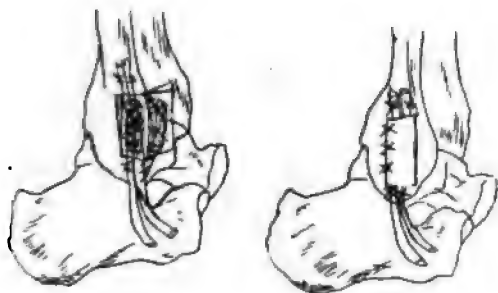
FIGS. 9 and 10.—Illustration of the author's sling brace adapted to maintain correction of varus deformity, the loop of the sling passing round the ankle, under the arch, continued upward on the other side of the foot and fixed to a metal upright as shown, thus suspending the foot and tending to correct deformity with each step. This sling is made of folded canton flannel, just large enough to pass on over the foot and heel.

foot impaired, lacks stability but does not necessarily become actually deformed, and with proper observation of its aftercare, with massage and muscle training, until the time has arrived when the extent of the permanent paralysis can be determined and the appropriate operative procedure for giv-

Heat.—The object which should be constantly before the surgeon in these poliomyelitis cases, so far as the muscles themselves are concerned, is to conserve their nutrition during the period following the acute stage and hasten the absorption of inflammatory exudate at the focus of the

lesion. Tonicity of the muscle is at least temporarily lost and atrophy more or less pronounced ensues. There is a decided lowering of the temperature of the affected limb. The leg is cold and the circulation is retarded and nutrition to the muscle fibre is interfered with. In many cases trophic disturbances manifest themselves, the leg becomes bluish and mottled, trophic ulcers may occur which are very sluggish and difficult to heal. Heat is the best treatment, aiding circulation and nutrition, and keeping up the local temperature to nearer that of the general body level. The ulcers

by the parent. A dead motor cell cannot be rejuvenated by a shock of electricity; a motor cell which is dormant may be injured by the nagging of the electric stimulus and muscle fibre may be further exhausted by



Method of securing the peroneal tendons to the external malleolus to reinforce external ligaments.

FIG. 11.—Drawings illustrating osteo-periosteal flap fixation of the paralyzed peroneal tendons used as additional external lateral ligaments. (Gallie).

heal spontaneously and this situation is relieved. In conjunction with massage I deem heat a very important part of our technic of treatment. Before massage or muscle training a thoro heating of the paralyzed limb should be made. Heat should also be applied to the affected region of the spine to aid in the absorption of the exudate and stimulate the blood supply to the focus of the lesion.

Electricity.—The employment of electricity as an adjunct in the management of these cases may be of some value, the extent of which is likely to be overestimated

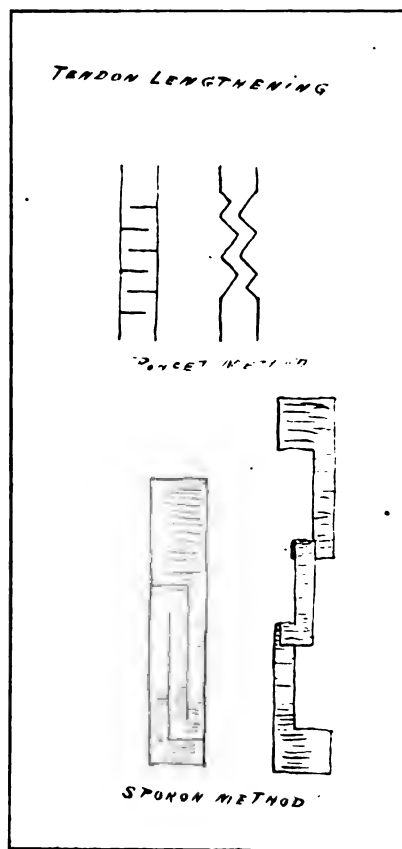


FIG. 12.—Drawing illustrating two methods of lengthening the tendon. In the upper drawing the number of lateral incisions in the tendon determine the additional length to be gained. In the lower the length of the two longitudinal incisions determine the additional length of the tendon to be gained.

an injudicious application, so it would seem that the slight benefit to the nutrition of the muscle, or the slight reaction brought about by the most careful use of this adjunct is of so little value, and the harmfulness of its injudicious application can be so great,

that its part in the treatment of these cases is of minor importance.

Massage and Muscle Training.—In muscle training, together with massage, we have our greatest source of benefit for these infantile paralysis cases. Great care and judgment must be exercised in its employment to get the maximum of benefit. Muscle training should not be begun too early after the initial infection, or carried to the point of fatigue or exhaustion of those muscles

has taken place, should massage be begun. Then as return of muscle power becomes apparent, muscle training should be begun to develop those muscles which show evidence of returning power. There should be no attempt made at training paralyzed muscles. These should receive massage, protection and rest.

Accurate anatomical knowledge of the particular muscle action to be developed in a given case is essential. Otherwise disap-



FIG. 13.—Illustrating a case of infantile foot drop with paralysis of the anterior tibial and impairment of the extensor longus digitorum. Shows the overacting extensor proprius hallucis hyper extending the great toe. The operation consisted of making use of the extensor proprius hallucis as a dorsi-flexor of the foot by inserting the tendon into the bone substance of the distal end of the first metatarsal.

which are in the process of restoration. No muscle training or massage should be attempted while the limbs are at all sensitive. The tenderness may persist for two or three months after the acute process has apparently subsided. Under this condition rest alone should be resorted to and the patient disturbed as little as possible. As soon as all tenderness has subsided, but not earlier than six weeks after the infection

pointment will follow and even harmful results can be expected. Without the application of correct anatomical and physiological knowledge one will find that he is developing added power in the already normal opposing muscle groups to the still further impediment of the partially paralyzed ones. The same rules must be adopted here as in any muscle training, whether it be for accuracy and precision of the expert in tennis,

baseball, or prize ring,—concentration, regularity, rhythm, reason and persistency are some of the requisites. To develop in the patient the ability to coordinate the impulse to perform a certain movement with the actual accomplishment of the response in the muscle or group of muscles, requires the intelligent cooperation of both pupil and instructor.

operating, viz.: to correct deformity, furnish stability and enhance the usefulness of an impaired limb. Before operating, at least one year following the initial infection should elapse in all instances and in some instances longer, even up to five years to make sure that the amount of actual deficiency of muscle balance and deformity is established. The inclination to perform



FIG. 14.—Illustrative case of paralysis of the calf with resultant calcaneus deformity. An appropriate case for the Whitman astragalectomy with the object of transferring the body weight nearer the middle of antero-posterior position of the foot. See the following x-ray illustrations 15 and 16.

Finally, when the time has passed for any reasonable expectation of further muscle recovery, and such instability or tendency to deformity exists that more radical means of relief must be resorted to, rational operative procedures should be performed to improve the function of the limb or correct a deformity. Such procedures have been and are being devised to supplant the annoying and cumbersome braces heretofore employed. With these cases there are always three reasons for

simple tenotomies even should be thoroughly considered.

It may be of assistance and offer a suggestion to the reader in his practice among these paralytics to outline some of these procedures successfully undertaken for certain definite deformities and crippling conditions.

Operations—Instances of Involvement of the Lower Limbs, Which Are Most Frequently Met With.—From the point of view of deformity and function we find the

tendency of flexion, abduction and external rotation of the thigh as a result of the paralysis, to be comparatively frequent and a difficult combination to control. There may be a complete paralysis of all the muscles controlling the correct position of the thigh, or such a combination of muscles involved as to prevent any one or two of its correct positions, or only portions of muscles producing faulty positions of it, resulting in a weakened effort on the part of the involved muscles to sufficiently resist the opposing action of the normal muscles. As an ex-

dence. Even after the deformity is corrected it is sometimes difficult to prevent its relapse. Obviously the only appliance efficient in maintaining perfectly the correction of this flexion, abduction and external rotation deformity, would be one preventing movements of the hip joint in these particular directions, and this necessitates a brace or appliance extending high enough to include the pelvis and well up and about the thorax as well as to extend down to include the foot, with free joints only at knee and ankle. This form of ap-

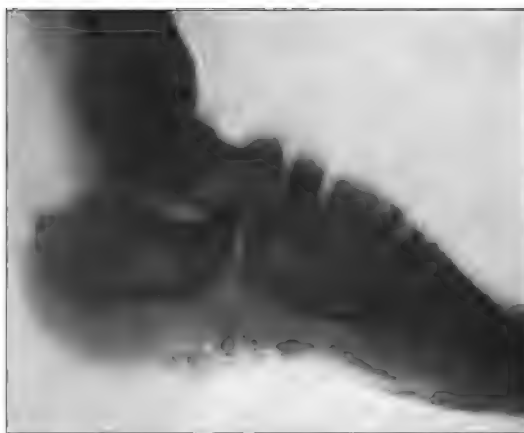


FIG. 15.—X-ray of normal foot of case described in Fig. 14.

ample, the adductors and internal rotators being partially or completely paralyzed, or any combination of them, disturbs and weakens the muscle balance and the limb takes the position of least resistance. (See illustration, Fig. No. 1).

Should this position of flexion and external rotation be permitted to continue for several months uncorrected, the result will be the contractures of the external rotators and flexors, and one of the most difficult deformities that we have to control ensues. No brace will overcome it when once well established and no brace should be applied with this deformity still in evi-

plance prevents flexion at the hip and necessarily interferes decidedly with the patient's sitting and is objected to for this reason primarily.

With efficient massage, judicious stretchings and muscle education, with, if need be, periods of fixation of the thigh in hyperextension and internal rotation, this tendency may be overcome; otherwise, operative intervention becomes necessary, followed by the brace, until all tendency to contracture is overcome.

The contracted structures preventing extension of the thigh are divided through a longitudinal incision between the anterior

superior spine of the ilium and the great trochanter close to their bony attachments to the pelvis, until the deformity can be readily stretched to over-correction. Then the trunk and limb are placed in plaster of Paris in hyperextension for a month, upon the removal of the cast the resistance to full extension of the thigh will be found to be overcome if the operation has been thoroughly done. Then intelligent massage and muscle education with the aid of such an appliance as I have just described, or a

at hip, knee and ankle. A shorter brace, not to include the pelvis and foot, is not serviceable owing to the inability to prevent external rotation of the leg with the brace applied. With the properly fitting long brace applied, the patient walks toeing straight ahead not in the extreme out-toeing deforming position. Later an operation can be done to attach the fascia lata to the outer surface of the great trochanter, with the thigh slightly internally rotated, which maintains correction.



FIG. 16.—X-ray of paralyzed foot of case in Fig. 14 showing the astragalus removed and the tibia and fibula transferred forward.

modification of it, will prevent a recurrence of this deformity. To correct the deformity and protect the parts in fixation for only a short time after operation invites certain recurrence and ultimate disappointment.

Paralysis of the adductors magnus, longus, brevis and the gracilis, prevents adduction of the thigh and external rotation deformity generally follows, but not of so marked degree usually as to prevent its correction by a light leg brace from the foot to include the pelvis, having free joints

Dislocation of the Hip.—Where the paralysis has affected the pyriformis, gemelli, obturators or quadratus femoris, the femoral head may be found to be partially or completely dislocated, the degree depending upon the length of time the individual has been walking since the paralysis took place, and upon the muscles involved. Ankylosing operations are inadvisable because of the uncertainty of ultimate ankylosis, and even when ankylosis is secured a stiff hip causes the patient great inconvenience. In my experience I have

found a most satisfactory and certain method of remedying this deformity by deepening the acetabulum and tightening the enveloping relaxed capsule of the joint. By my particular technic there is no chance of interfering with the joint function as the hip joint is not entered as is done if other

or snap joint which is adjustable to flexion and extension, to prevent this deforming position of the knee and relieve the overstrain of the hamstring muscles until sufficient time has passed to determine the extent of the permanent paralysis, when, if the recurvatum is severe, or increasing with



FIGS. 17 AND 18.—Illustrating a case of infantile valgus and pronation of the foot in a boy 7 years old. Figure 17 showing the position of deformity and figure 18 showing the correction obtained following the author's pin graft arthrodesis of the astragalo-scapoid joint.

technic is followed. (See illustrations 2 and 3).

Genu Recurvatum.—Paralysis of the semi-membranosus and biceps (see illustration Fig. No. 4) produces a relaxed knee joint, with in many instances knock knee or bowleg deformity. This deformity calls for a leg support with no joint at the knee (see illustration Fig. No. 5) or with a lock

the increase of body weight and growth, a stabilizing operation should be performed to stiffen the knee joint. See illustrations.

Paralysis of the quadriceps extensor is followed by the inability to extend the leg. In some cases there is some associated involvement of the hamstrings so that the patient may have nearly a flail knee joint, yet be able to manage the knee thru compen-

satory muscle education and thru acquiring the ability to manage the limb by swinging or throwing forward the leg until he places it under him, so that the plane of body weight bearing is brought slightly back of a straight line thru the thigh and leg, a slight genu recurvatum. In this way he is able to stand and manage his leg fairly well and often does better than if a brace with a stop to prevent flexion at the knee were applied.

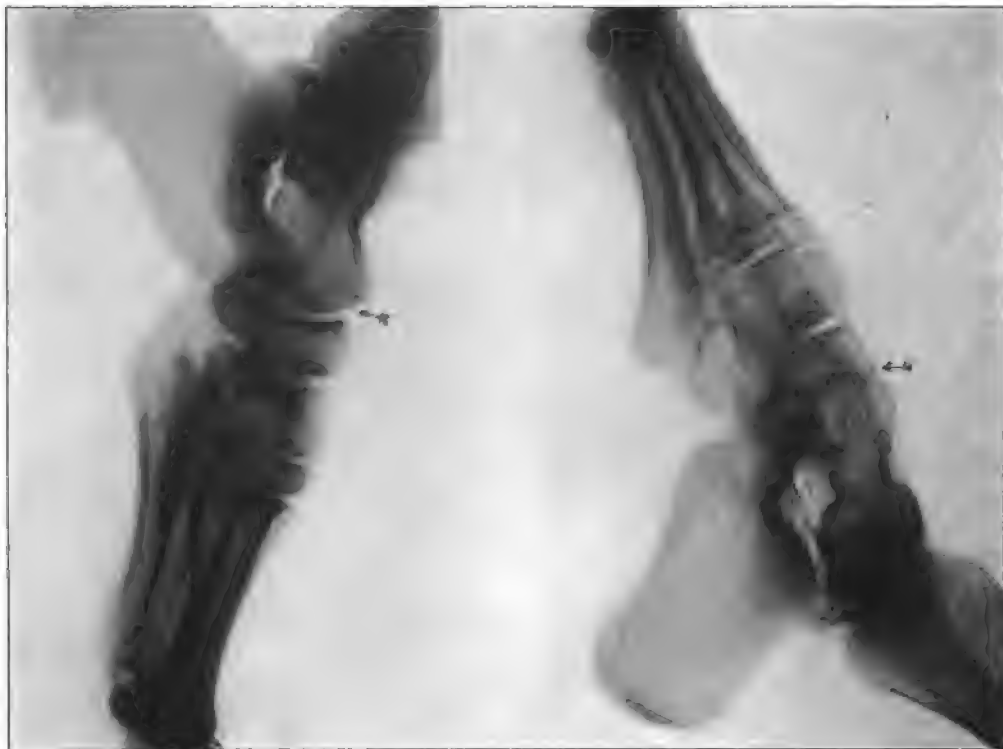
Many cases of this type of quadriceps paralysis tend to flexion deformity at the knee by contracture of the posterior joint ligaments and hamstring muscles so as to prevent even full extension. In this instance the flexion contracture should be

thoroly overcome and prevented from recurring long enough to determine the extent of the permanent paralysis, when, if the inability to manage the leg so as to support the body weight still persists, recourse to strengthening the extensor power of the leg can be had by transplanting one or two of the hamstring tendons into the patella, thus diminishing the effect of the overacting flexors of the leg and transferring part of this flexor action to that of the extensors of the leg.

Here also ankylosis of the knee is done when it is deemed unwise or impossible to make use of the above mentioned transference of the hamstring tendons. Total paralysis of the muscles of the thigh ren-



FIGS. 19 and 20.—X-rays of a foot showing the author's pin arthrodesis of the astragalo-navicular joint taken one year after operation. In Fig. 19 the secure bony union between the head of the astragalus and the navicular of the right foot should be noted, also the denser



shadow indicating the bone pin in position thru the inner projection of the right navicular into the head of the astragalus. In Fig. 20 the lateral view of the same foot shows the ankylosis and position of the tarsus.

ders the knee joint flail or lax. In such a type (see illustration No. 5) a leg brace, stiff at the knee joint, should be used until such time has elapsed that one can make sure of the extent and permanency of the paralysis, when an ankylosing operation of the knee joint is the most serviceable procedure. (See illustration No. 6). The free joint at the hip permits a free swinging of the leg and thus a stilt effect is produced. The ankylosing operation had best be deferred until the patient is at least ten years of age and should be done, as all plastic surgery in poliomyelitis, with the greatest care and precision. In the younger cases post-operative protection should be uninterrupted for a year, either by plaster of Paris or brace. I have employed the patella as a graft in

these cases among older subjects. (See illustration Fig. No. 6).

Paralytic Deformities of the Foot.—

The paralysis of the peroneus longus and brevis muscles produces the characteristic deformity of varus of the foot, with a dropping of its outer border and a lifting of its inner border, due to the overacting anterior and posterior tibial muscles, which are aided in many instances by the extensor longus digitorum and extensor proprius hallucis. In long standing cases the forefoot is turned markedly inward and dorsiflexed on the leg, and the patient bears the body weight on the outer border of the foot. The forefoot rotates about the head of the astragalus, a ball and socket joint. (See illustrations Nos. 7 and 8).

In all foot deformities it is found that various bracing devices are far from satisfactory in maintaining correction, as body weight bearing, in conjunction with the existing muscle power, has such a strong influence in causing the deformity to recur. The most efficient corrective splint is a smooth stocking fitting plaster of Paris case. A leather boot of any kind tends to soften and stretch, thus loosening its grip on the foot so that the foot rolls over in the shoe too easily. I have devised a simple and serviceable brace for maintaining correction pending operation which is shown in the accompanying illustrations. (See illustrations Nos. 9 and 10).

Following the preliminary period in the aftercare when the time has arrived that a determination of the extent of the permanent paralysis can be made certain, operative procedure furnishes the most satisfactory result in correcting the deformity, stabilizing the foot and providing the greatest range of function. For operative correction of varus deformity, where the peroneal group also is affected, I have used successfully my bone graft arthrodesis of the astragaloscaphoid joint, in conjunction with the lifting and securing the outer border of the foot by making use of the tendons of the paralyzed peroneal muscles as additional ligaments, fastening them directly to the outer surface of the lower end of the fibula by Gallie's method of tendon fixation. (See illustration No. 11).

Where the calf group also is included with the paralysis of the peroneals, the operation of choice is that of astragalectomy and transference of the body weight further forward toward the transverse midline of the foot (Whitman's technic).

When the anterior leg group is paralyzed along with the peroneals, including the ex-

tensor longus digitorum, extensor proprius hallucis, one or both, so that



FIG. 21.—Illustrates one of the author's cases of extensive deformity of the foot following infantile paralysis presenting the marked deformity of calcaneus, eversion and cavus of the foot. There is a paralysis of the anterior and posterior tibials and of the calf. A large part of the deformity is brought about by the over-acting peroneal group, the extensor longus digitorum and the extensor proprius hallucis. This extreme deformity is best met by the combination of procedure consisting of extensive stretching to overcome the valgus, subcutaneous division of the contracted plantar structures and stretching to overcome the cavus, the removal of the astragalus and transposing the tibia and fibula forward as per Whitman's technic, and finally, the transplanting of the over-acting peroneals into the insertion of the tendo Achillis, to act in place of the paralyzed calf. This was all done at one sitting with a most gratifying result, marked improvement of the contour of the foot as well as stability and function. See Figs. 22, 23 and 24.

there is not sufficient muscle force to oppose the over-action and prevent a contracture of the calf group holding the foot

in equinus as well as varus, it is necessary to lengthen the tendo Achillis (see illustration No. 12) to overcome the equinus portion of the deformity, as well as to do a fixation operation of the paralyzed peroneal tendons to the fibula to correct the dropping of the outer border of the foot. In

muscles reach in mass in order to gain the longest leverage action possible to produce sufficient resistance to the action of the calf muscles.

There are instances where I have found the extensor proprius hallucis the only remaining active muscle of the dorsi-flexors of the foot and in the patient's effort to



FIG. 22.—Front view of case Fig. 21 taken one year after operation. Shows marked improvement in contour and position and is a painless foot in walking.

some cases where the above operative combination may not be deemed sufficient to prevent a relapse of the equinus deformity (due to there being extensive involvement of the anterior leg groups) an additional stabilizing procedure should be done in conjunction, consisting of the fixation by the osteo-periosteal flap method of the tendon of the extensor longus digitorum or tibialis anticus, or both, to the anterior internal surface of the tibia, as high up on the tibia as the tendinous fibres of these



FIG. 23.—Side view of case Fig. 21 taken one year after operation, shows position and stability in standing.

dorsi-flex the foot he markedly hyper-extended the great toe. To take advantage of this muscle power as a dorsi-flexor of the foot I have attached three-quarters of its tendon to the distal end of the first metatarsal, directly into the bone, thru a hole drilled therein of sufficient size to admit this portion of the tendon snugly, under sufficient tension to correct the hyper-extension of the first phalanx, thus adapting the action of this hallucis muscle to a pure dorsi-flexor of the foot. (See illustration No. 13).

Where there is a paralysis of the calf group permitting the deformity of calcaneus, the unopposed anterior leg groups of muscles contract and prevent extension of the foot on the leg. The patient walks on the heel and is unable to reach the floor with the plantar surface of the foot. In older cases this is a very painful deformity as the posterior under surface of the heel



FIG. 24.—Another side view of case Fig. 21 taken one year after operation, showing motion in extension following the astragalectomy.

becomes very painful in weight bearing. (See illustrative case No. 14).

The method of choice in operative correction in my experience is astragalectomy (Whitman) and transference of part of the action of the peroneal group to act in place of the paralyzed calf group by fixing the transferred peroneal tendon into the insertion of the tendo Achillis. (See X-ray illustrations 15 and 16).

In cases of paralytic valgus due to the involvement of the anterior tibial muscle, or other dorsi-flexors of the foot, the opera-

tive method of choice, in my experience furnishing an assured correction of the deformity and stability of the foot, is my autogenous pin graft arthrodesis of the astragalo-scapoid joint. I have found this procedure the most accurate and reliable of any method in all cases of valgus deformity of the foot. Should there be an equinus contracture of the calf group in conjunction with the valgus deformity, a lengthening of the tendo Achillis should be done six weeks later. (See illustrations Nos. 17 and 18), also two X-ray views taken one year after my pin graft arthrodesis, Figs. 19 and 20).

In paralytic valgus, associated with calcaneus and cavus, due to the paralysis of the anterior and posterior tibials, together with a paralysis of the calf group, astragalectomy (Whitman) and the transplantation of the peroneal tendons into the insertion of the tendo Achillis after a plantar fasciotomy has been done subcutaneously, is, in my experience, the most serviceable procedure. (See illustrations Nos. 21, 22, 23 and 24).

Where the paralysis has been so extensive as to include all the muscles of the leg controlling the foot, producing a dangle foot, an astragalectomy to furnish stability to the foot is the operation of choice.

Tonsils and Cervical Adenitis.—Gardiner in *The Lancet*, (October 2, 1915) contends that in 80 per cent. of chronic cervical adenitis cases the tonsils are the source of infection, and that the size of the tonsil makes little difference. The number of cases of the glandular involvement being tuberculous is relatively small, many cases so considered being in reality chronic septic glands.

This author favors complete enucleation of deeply infected cervical glands, with, of course, proper attention to diseased tonsils.

THE MILK IN THE COCOANUT.¹

BY

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Some time ago Prof. Kastle, of Lexington, gave us an interesting illustrated lesson on the growth of young animals. And since that time more ambitious societies elsewhere are studying Prof. Kastle's observations, thereby yielding priority to the Louisville Medical Club. We were shown that since the time of Liebig the elemental composition of the protein molecule in general has been known; that its composition is exceedingly complex and varies in the different kinds of protein; and that we now can differentiate only sixty percent of the different types of protein.

Among the vegetable proteins which have no growth-producing properties is the zein of maize, and among those whose exhibition is followed by growth is the edestin of hemp seed. This latter is comparable to casein and to blood.

Research workers have still a great deal to do before they are ready to give us data whereby we can prescribe food for the sick with ideal efficacy; and, in this connection, the physician in his own humble way, here and there, now and then, can contribute to the elucidation of a problem of economic importance. For example, by the methods of diagnosis now available, we can observe and record the effects of different kinds of food on nutrition and euphoria of the patient.

In prescribing food for a patient a knowledge of the quantitative and qualitative nature of the output of his excretions, the end products of metabolism, is essential. With a reasonably arithmetically accurate

idea of that, and knowing the requirements of his system, in the light of the state of his nutrition and disease-condition, we are in a position to prescribe the kind of food most likely to sustain him economically and without undesirable by-effects.

We cannot apply arithmetical principles to our work like the engineer of a great railroad system who has to calculate in advance, from the known power of his rolling stock and the number of heat units in a certain kind of coal he has been offered, what expenditure to make; nor like the quartermaster of an army corps who must calculate, from the number of men to be fed, their output of energy and the climatic conditions, the number of calories of protein, fat and carbohydrates required, and select from available foodstuffs what is needed. Our work does not admit of such mathematical detail. The quartermaster has the advantage over us; his men must take what he allows; our patient often reverses the authority.

In selecting a diet we must reckon with age, sex, temperament, habits of mind and body, occupation, etc. Whim or prejudice against a particular kind of food often is a serious snag in the way of our helping a patient, tho sometimes it is quite a guide to us. Anaphylaxis perhaps explains some of the opposition we meet. It is as much of a sin to allow such rich proteins as eggs to a patient whose abdomen is overloaded and tender, and whose urine is of high specific gravity and loaded with amorphous urates (the end products of protein metabolism), as it is to allow batter cakes and molasses to a diabetic.

A well-preserved woman, aged seventy-six had been staying in all winter excepting for an occasional automobile ride, with a maid to do all work for her, after eating of

¹Read before the Louisville Medical Club of Louisville, Kentucky, September 1st, 1916.

hunks of half-raw dough which she calls "biscuit," fried eggs and fried fresh pork-chop followed by ice cream, suffered from indigestion. I prescribed a diet of milk-whey and fruit. Her son—who "had studied medicine" and therefore knew more than I,—thought his mother weak from want of nourishing food, and from medicine; and he prepared some strong beef-broth and gave it to her, and then some egg-nog, thus reinducing anaphylactic reaction. You can imagine the result. It was well that the sinner was her son, and not her maid or her doctor.

Stopping in a grocery store one evening last winter on my way home, and observing the three dark discs on the summit of a cocoanut, remnants of the embryologic palm flower stigmata, reminded me of a rat that lived in a hole in the little room I occupied years ago and glowered at me with his two black eyes and his black snout. I bought that rat or cocoanut, and not having anything in particular to do that night, I thought to make an analysis to see what the milk consisted of. Its reaction in oxalic acid equivalent was 40° . This equals 2.52 grams to the liter, or $1\frac{1}{2}$ grains acid to the ounce. Of sugar it contained seven parts to the thousand, or $3\frac{1}{3}$ grains to the ounce. Albumen eighty-three hundredths to the thousand, or $\frac{3}{4}$ grain to the ounce. The albumen coagulated by heat outweighed by about twenty-five per cent that coagulated by ferrocyanide of potassium, which anomaly I cannot explain. It contained one and six tenths parts to the thousand of sodium chloride, or $\frac{1}{4}$ grain to the ounce. Phosphoric anhydride $2\frac{3}{10}$ to the thousand, or $1\frac{1}{10}$ grains to the ounce. Sulphuric anhydride $3\frac{7}{10}$ to the thousand, or $1\frac{1}{2}$ grains to the ounce. Traces of iron.

Since obtaining these results I have been

unable to get another cocoanut, and there will be no more until November, so I am unable to tell what the percentage of total solids in the cocoanut milk amount to, and what ratio of the whole I obtained. But, it seems that in the milk of the cocoanut we have a food, if not of high caloric value, at least rich in the inorganic constituents of foods, and which might be useful in the sick room and in convalescence.

Since the taste of our patients in sickness is often depraved from the presence of aromatic toxins demoralizing the hypoglossal and glosso-pharyngeal nerves, most anything they have relished before now becomes distasteful to them, and something new is often acceptable. I tasted this cocoanut milk and found it to be insipid; but when salted, to me it was delicious. My stomach being empty, I drank all I had left and tried to study the effect the next morning. Then I really thought I felt invigorated, when I tried to connect my buccal and muscular sensations with the cocoanut milk of the night before, tho the personal equation would vitiate any right I might have to make such a statement. I am satisfied, however, that its effect, if any, was beneficial. The relatively large amount of phosphoric acid and the traces of iron justify the statement.

I did not expect to find so much sodium chloride in a tropical fruit. Cocoanut trees are said to grow only near the seacoast. I have seen them growing about one hundred miles inland from the coast of the Bay of Bengal, but that was on flat land which had at one time been under seawater. The natives train large monkeys to climb the cocoanut trees; and, when the natives "throw up stones at the monkeys, the monkeys throw down the cocoanuts at the natives."

Of course the milk of the cocoanut contains oil which can be extracted with ether or carbon disulphide, and the ether evaporated; but the most of the oil is contained in the "meat." I was told by a chemist that "cocoanut oil is no good and should not be used for food," but I have seen the most delicious dishes made by parching equal parts of sugar, corn meal (or other farina) and wheat bran, and then adding cocoanut oil as "shortening" and salt. The caramelizing of the sugar makes it sedative to the gastric mucosa, and the same heat disintegrates the union of the silica with the phosphates of the bran. A higher degree of carbonization or dehydration of this compound when brewed like coffee, makes an agreeable stimulating phosphatic drink.

The poorer natives of Hindustan, where I first saw cocoanut trees growing, wear no clothes excepting a breech cloth. To them salt is a luxury, and possibly the large amount of salt in the cocoanut is especially attractive to their taste. They only take one meal of cooked rice a day, and they are as agile as a cat.

The relatively large amount of sulphuric acid in the milk in the cocoanut is probably absorbed by the roots of the trees as ammonium sulphate $(\text{NH}_4)_2\text{SO}_4$. The jungle is exceedingly rich in both animal and vegetable life; the two biological kingdoms living at the expense of one another.

The Hindoo will not eat beef, because, being a transmigrationist, he believes that the souls of his ancestors on death, if they have been good, enter the body of the cow; and not even a cannibal much less a Hindoo would be willing to eat his own kith and kin. That cow, however, may be eaten, and often is, by a royal Bengal tiger, which, in turn, may meet his death by the

bite of a cobra di capello. The body of the tiger, like other animal bodies, contains sulphur and nitrogen in organic combination; the sulphur, on decomposition of the animal body, first appears as sulphuretted hydrogen (hydrosulphuric acid H_2S) which is gradually oxidized into sulphuric acid (H_2SO_4); the nitrogen combination becomes deoxidized to the stage when ammonia (NH_3) appears, when it combines with the sulphuric acid to form sulphate of ammonia. This is now ready for absorption by the roots of the cocoanut tree; so that "the Hindoo's grandfather in the cow becomes part of the tiger which became part of the cocoanut to be eaten by the man!"

Psychological conditions are much influenced by unassimilated proteins. Night terrors and even dreams are usually associated with excess of protein, in some stage of metabolism as toxins, in the circulation, irritating the cortex cerebri, tho these manifestations of morbid cerebration are assumed also to be due to nerve influences originating within the gastroenteric system and transmitted upward thru the splanchnic nerves. Living under mental and physical strain first induces toxemia from demoralized metabolism, acetone being a common product of disordered metabolism; and then the toxins induce increased formation of antibodies. An excess of sodium chloride in the system retards the formation of these antibodies and retards their decomposition after they have combined with the toxins; then the rate of elimination of sodium chloride is a measure of the vitality of the individual.

In these conditions of disturbed metabolism it is possible for part of the brain to be awake and another part to be asleep at the same time. Many years ago at sea,

for several consecutive days I was not conscious of having been asleep, and during that time hardly ever lay down. On two occasions afterward I had proof of what I previously doubted, that one may sleep on horseback. One of these experiences—I was riding in the woods on a dark night on horseback, and I knew that I had an undue amount of protein in my circulation which under the circumstances could not be normally metabolized. I dreamt that I met my father (who was thousands of miles away from that place at the time) just under the old walls of a tower with a large clock where I attended college, and he began to talk to me about the late hour. As I looked upward at the clock a sharp "look out" from the man riding by my side awakened me. My horse, a gray with a white mane, reared upon his hind legs until my face touched his neck, and I saw at the same instant, diaphanously, the old clock and the white mane. Visual impressions on the retina last $\frac{1}{8}$ of a second: this can be demonstrated by revolving discs. That mental impression lasted a good 3 seconds after I began to see the white mane. The clock gradually faded as consciousness returned probably within three seconds. That I should have balanced myself on a plunging horse in the dark without being unhorsed was not due to conscious cerebration, but probably due to the unconscious automatic centers in the cord, for then these centers had been well exercised.

Living under such strained conditions protein food is usually toxic, and I can remember that the juice of one grape fruit, the only food available, not only relieved hunger but gave a delightful sense of satisfaction such as is experienced on appeasing hunger by a proper meal. Such a con-

dition would be a good one to test the merits of the milk in the cocoanut, but such opportunities do not often occur.

With all the remarkable discoveries made by medical men within the last twenty-five years, we are still at sea as to the best methods of feeding in the various occupations. Those who idle away their time and do not give to society the kind and output of energy they owe as members of the community, invariably make work for the doctors,—or more frequently, money for the quacks. Those farmer boys who come to the city and get jobs on the street cars, when they eat the same kind of food as they did on the farm, invariably suffer. In such cases the physician who measures the nitrogen output and compares that with the chlorine output (they should be equal in normal euphoria), has his work well in hand. Why the human machine should be so persistently treated at random and only after it has broken down, when all kinds of machinery is overhauled in advance of break-down, is not very creditable to human intelligence, and is something for doctors to think about and prepare themselves for.

A simple case of absent-mindedness shows a "screw loose" somewhere, and it should be the business of the doctor to ascertain where that loose screw is. That little symptom may furnish the clue to many disorders and diseases in their incipency, when it might be possible to avert disaster and beat the surgeons out of a job! It is related of Sir Isaac Newton (1642-1727 = 85) that he was in the habit of disentangling those cerebral combinations necessary to intense mental concentration, when they persisted too long, by working out a problem in mathematics. One night he directed his attendant when

to call him in the morning. It was his custom when called to cook an egg for breakfast in his own room. He asked the attendant "how long should it boil?" "Three minutes, Sir Isaac." The attendant returned in twenty minutes, and found Newton holding the egg in his hand and staring at it while the watch was boiling in the pan of water. Newton then had probably too much protein in his system; he needed more carbohydrate for the kind of work he was doing!

ANOTHER RELIABLE SNAKE STORY.

BY

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One evening many years ago I was seated near the desk of a famous man of letters who opened an envelope, glanced hastily at its contents, summoned his managing editor, and remarked with deep enthusiasm, "Here is another rattling good snake story from Blankins; run it tomorrow under a tip-top heading."

I remember that I felt something akin to astonishment that so distinguished a man should ballast the columns of a great newspaper with anything so trivial as a snake story. However, after reading Genesis III, written by the greatest man of letters of his day, not to mention later and less sublime treatises by Leonard Stjneger, Howard Kelly and Raymond Ditmars, I began to attach more than ordinary importance to the movements of the snake, more especially those made in my own immediate vicinity. It must not be inferred that I rank Moses above the distinguished scientific men named, except as a literary

man. Unfortunately, literature and truth are not always convertible terms.

During a visit to another part of this State I became much attached to a young man of Spanish origin who was deeply interested in scientific matters. We talked much of medical and other sciences. One day he told me, in substance, the following story which well exemplifies the errors liable to arise when conclusions are based on superficial facts, or half truths.

A married man of 35 was stung, slightly above the ankle joint, by a large rattlesnake and died within a few hours. At the time of the injury the victim was wearing a pair of fancy boots. After mourning grievously for a few days, his widow remarried and as a part of her dowry bestowed the boots of husband No. 1 upon husband No. 2. The latter died within a few days of his wedding. Her spirit undaunted, the widow promptly remarried, the boots going as usual to the new husband. Death again left the woman a widow.

While not expressed in words, the inference was perfectly plain: the fangs of the rattler were imbedded in the leather and had been the direct cause of all three deaths.

To which I replied, with considerable spirit: "You must not repeat such preposterous nonsense and expect to be respected as a man of scientific training. If you should narrate that story in a body of educated men they would laugh you to scorn. Science has no time for such foolishness."

This caustic rebuke brought out an explanation altogether truthful and wholly in accord with the most advanced scientific requirements. Husband No. 2 had died from pneumonia, a disease which even our "pathic" colleagues sometimes fail to cure,

and whose ravages are even looked upon with composure by our esteemed and wealthy fellow citizens, the undertakers. Husband No. 3, a man of powerful frame and vigorous health, fell suddenly ill with "inflamed bowels" one afternoon and passed away thirty-six hours later—without operation, I ought to add, for the benefit of some of our anxious newspaper friends.

Reviewing the death list, it is probable that prompt treatment in skilled hands would have saved husband No. 1. As to the pneumonia, few men of ripe experience will say that they can do much for it beyond the application of a few well understood expedients. So far as husband No. 3 is concerned—or, rather, was concerned—an immediate operation might have saved him, and then again it might not. Some infections of the appendix are so deadly that nothing will arrest their fatal progress. There are some poisons so virulent in their nature that the sting of a rattlesnake appears mild in comparison.

USEFUL KNOWLEDGE OF STAMMERING.

BY

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To have knowledge of a generally misunderstood subject is to win desirable distinction. How often do we hear it said admiringly that a certain person "gave an intelligent opinion when every one else was in doubt." Those who appreciate that distinction will realize one opportunity to obtain it provided by Dr. Liebmann's booklet, "Die psychische Behandlung von Sprachstörungen," published by Oscar Coblentz, Berlin, 1914, the simple but valuable con-

tents of which are a light in the darkness which envelopes the subject of stammering.

The most striking feature of this latest reliable development of the subject is its revolutionary character—not the first such development in medicine. Whereas it was thought, and still is, that the stammerer should be taught to talk, it now appears that it is injurious to him to try to teach him to talk. No treatment is considered complete without breathing exercises; yet, the breathing exercises are clearly shown to be harmful. These features and many others become evident from a review of a typical case in the new light on the subject.

Consider the case of a child who contracts stammering by imitation. That imitation is conscious interference with his normal speech. At first it is merely fun, and it may be stopped at any time. Some one tells the child to desist because it might contract the disorder, or the fear of contracting it arises from contemplation of the suffering of the one who is imitated. In this state of fright the child makes a panicky effort to talk correctly, misdirects the effort, and thereby blocks its normal speech. That convinces the child that it has been attacked by the disorder; and it continues its misdirected efforts in order to avoid the imaginary trouble.

This view not only coincides with the universally admitted facts, but explains much that has hitherto been considered a mystery. It is the only view that has accounted for the acquisition of stammering by imitation. The origin in childhood is due to the fact that normal speech is most readily interfered with then. The increase in tenacity with increase in indulgence—children are much more readily corrected than adults—is due to the fact that the repeated speech difficulty intensifies the con-

viction of speech disability. Unity of causation has never before been shown, as witness the remark by Fletcher, one of the recent investigators, "Just how being bitten by a dog can produce stuttering in the same fashion in which habits are acquired is not easy to see;" But it is very clear under the interference-with-speech view. The fright so unnerves the child that its speech becomes broken, and the child makes the conscious interfering effort to correct that broken speech. The effort is abortive; the child thinks its speech is deranged; and it continues the effort in order to correct the derangement, not realizing that it is making the derangement. Sicknesses, falls, extreme emotion, extreme exhaustion, all cause broken speech, and consequently are all inducers of stammering. Similarly, thru all the long list of peculiarities of this most peculiar disorder, the explanation is found satisfactory; and that can not truly be said of any other explanation.

Bearing in mind that stammering is frightened interference with speech, we see the harmfulness of the current treatments; the breathing, vocal, and articulatory instruction become stammering when that instruction is followed by the fright which almost inevitably returns when the pupil is away from the stammering school. That instruction may be practiced with apparently beneficial results in the calming environment of the cure—indeed, the distractive effect there may be really beneficial—but in a disturbing environment it is no longer a distraction. It rivets the victim's attention on his speech and induces him to redouble his misdirected efforts instead of desisting from them. Ample testimony to this is available from sources independent of Thorpe, Liebmann, and other investiga-

tors. For instance, one relapse stammerer writes, "I have failed at two so-called schools, and now my malady has taken a most pronounced mental phase, that of entertaining constantly a dreadful fear of speaking, thereby making me stammer on practically every sound I utter."

Whoever treats stammering will find rational treatment outlined in Dr. Liebmann's booklet; and whoever advises in regard to stammering may credit himself and benefit others by disseminating this latest light.

PELLAGRA.

BY

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A research conducted according to scientific criteria is the only research which will give dependable results. It is high time that medical research quit trying to mould facts to fit hypotheses and devotes its energies and endowments to making hypotheses conform to facts. The true end and purpose of all medical research is the prevention and cure of disease. Such research is humanitarian and altruistic. It is a prostitution of both the sentiments and purpose of research to make it a platform upon which to build reputations or a rostrum from which to advocate pet hypotheses. The writer has the temerity to make the foregoing assertions at the peril of being called "unethical" or of being cited for suspension or expulsion from his medical societies. He further desires to be understood as meaning that these assertions especially apply to the so-called research in pellagra.

The cause, prevention and cure of pellagra were announced to the scientific and medi-

cal world in May, 1913. The announcement came from the laboratories of one of the greatest universities of the world. The research which had been conducted for years according to the most scientific criteria, is complete, conclusive, incontrovertible. In the brilliant monographs detailing this research, Profs. Alessandrini and Scala of the Institute of Experimental Hygiene of the University of Rome, make the following statements as to the etiology of pellagra.

1. Pellagra is a chronic acidosis caused by colloidal silica in drinking water coming from clay soils.

2. Pellagra is a disease strictly localized and contracted only in those regions where the water commonly drunk originates in clay soils.

3. Pellagra has no relation to diet, work, domicile or sanitary environment.

The writer has been a collaborator of Alessandrini and Scala for more than three years. When their works were published they sent them to him with the request that he translate and publish them in English. This has been done. For this publication they sent the original half tone plates of the illustrations. Together with the writer's collaborative work, the great research of the Italian scientists is before the American medical profession. In addition to this, the writer has written for the American and Italian medical press and has lectured before many medical societies.

The work of Alessandrini and Scala is well known to research workers in America. The work is correct, conclusive, final. There was no possible way of assailing it directly. All pellagrins came under its provisions. All pellagrins recovered if treated according to their directions. But the research was not done in Germany. It was published in Ital-

ian instead of in German. It did not bear the label "Made in Germany." It was not introduced to the American profession thru one of the great universities or endowed foundations, or thru any of the other "authorized" or "recognized" channels. Therefore, it was "unscientific." Since the research could not be attacked directly, a number of counter researches were undertaken according to the well known method and policy so aptly named by Reed "a policy of concerted and cumulative negation." Their conclusions were formed before the so-called "researches" were undertaken. Their purpose was to discredit the Italian findings. One of these was undertaken by the United States Public Health Service. It was decided that scurvy was a disease readily confused with pellagra. The experiment was conducted upon convicts in the State Penitentiary of Mississippi. It resulted in the monstrous assertion and gratuitous insult that the people of the South are underfed! This propaganda enjoys the prestige and frank of the Government. It has accomplished much in retarding the true and scientific knowledge of pellagra, that is, it has accomplished a part of its purpose. Another research comes from Nashville, Tennessee. By juggling facts and making many misstatements as to water supplies, an attack is made upon the findings of Alessandrini and Scala. A third attack comes from certain chemists who have attempted to draw an analogy between pellagra and beriberi. This might be called the "vitamine" theory. All of these "researches" evidence that poverty of scientific acumen which is such a disappointing characteristic of "authorized" and orthodox American research. These researches were not undertaken in good faith. These research men are

not ignorant. They have unusual opportunity to know the truth. They have unlimited means at their disposal. To accuse them of sincerity is to accuse them of ignorance. They have entirely lost sight of the true aims and ends of medical research, and delight to reduce it to the petty level of academic controversy. This has gone on now for over three years while the good people of the South sicken and die of a readily preventable and curable malady.

Pellagra in Europe is endemic in Spain, Portugal, Italy, the Tyrol, Roumania and Bessarabia. It is confined to those areas where the soils are clays derived from the erosion and weathering of the igneous and crystalline rocks. It is absent from areas characterized by calcareous soils. It prevails where the water is soft and comes from the clays. The pellagrous area coincides with the area of pine forests. It is absent in prairie regions.

It is no violation of scientific candor to assume that an identical disease would have a similar cause in America. In fact, such a statement can be made with mathematical exactness. A study of the geology of the endemic area in the United States is convincing. The areas of our southern states marked by the predominance of clays derived from the igneous and crystalline rocks are highly pellagrous. The limestone regions are immune. An extensive research has been made upon this very problem. Thousands of analyses of soils have been made in immune and pellagrous areas. It has been proven that where the calcium in the soil is below one-half per cent, the region is pellagrous; where the calcium in the soil is between one-half and one per cent, there may be some pellagra; where the calcium in the soil exceeds one per cent, there is no

pellagra. In the pellagrous areas, the surface water of the streams and rivers contains from 18 to 26 parts per million of silica and from 5 to 13 parts of calcium. In the partially pellagrous areas the silica and calcium are about equal in amount in surface waters. In immune areas the silica is about the same while the calcium bicarbonate attains 150 to 200 parts per million. All of this work has been done by the United States Geological Survey, the State Geological Surveys, and by the Bureau of Soils. It has been published for gratuitous distribution and is available to all research workers.

Aside from all considerations of the geology of the pellagrous areas, pellagra, to a chemist and toxicologist is a silica intoxication. The toxicology of silica is nothing new. It is just as well known as the toxicology of arsenic or mercury. Scientific works are full of it. It has even been written in German. The writer also has it in French as well as in English. It was printed in Paris in 1846 and in Dresden and Leipsic in 1847. The symptomatology of pellagra as written today agrees in every particular with the toxicology of silica written sixty years ago. All the laboratory and domestic animals are as susceptible as man. Pellagra is a common disease of cattle, cats and dogs in Italy. Rabbits and guinea pigs readily contract it in the laboratory.

It is equally well known to chemists and toxicologists that colloidal silica is rendered inert by carbonate alkalies. The common carbonate alkalies are the carbonates of sodium and potassium. The carbonates of the alkaline earths are the carbonates of calcium and magnesium. When these are largely in excess of the colloidal silica in drinking water the people drinking the water do

not have pellagra, regardless of diet, labor, domicile and sanitary environment. Since the carbonates are known to be the efficient antidotes of silica poisoning, and since pellagra is a silica poisoning, it is very reasonable that the carbonates be given as the antidote. In toxicology, such a procedure is axiomatic. Neither the "fury of speech or the truculence of pen" can gainsay its truth. Such a proposition is as basic in medicine as the statement that two times two are four in mathematics. Upon such basic scientific facts, no man has a right to a contrary opinion.

It follows, then, that to prevent pellagra a water of temporary hardness should be used for drinking. In pellagrous areas, springs and wells should be cleaned out and walled with good limestone laid in Portland cement mortar. Such wells and springs should be well housed so as to prevent clay washing in from above. From six inches to a foot of broken limestone should be placed in the bottom. Small amounts of lime should be added from time to time. Where these simple measures are impractical, a small amount of lime should be added to each bucketful of water drawn for drinking. For municipal water supplies, the settling basins, filters and clear water basins should be built of concrete made of crushed limestone and Portland cement. The bottoms of reservoirs, wherever practical, should be covered with at least a foot of crushed limestone. Filter sand should have a reasonable proportion of fine limestone screenings. A liberal amount of lime should be used as a coagulant.

Pellagrous patients should be taken off of pellagrogenic water for drinking purposes and given a common "hard" or limestone water. The soundness of this statement is

commonly exemplified in the results when pellagrous patients emigrate to a locality where the drinking water is hard. They simply get well without any other treatment. In addition to the hard water to drink, the acid intoxication from colloidal silica poisoning can be readily antidoted by the hypodermic administration of one cubic centimeter of a ten per cent solution of neutral sodium citrate. This should be given daily for about two weeks, then on alternate days for two or three weeks longer. This will cure the average case. *Liquor calcis*, milk of magnesia and calcium lactate, as well as sodium carbonate are also indicated. Preference is accorded to the calcium and magnesium salts because of their valence, to sodium citrate because of the facility of hypodermic administration. In addition to this antidotal treatment, the symptoms or manifestations should be treated symptomatically.

The above treatment is being used with unfailling success all over the United States and in Italy.

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PEACE, DOLLS AND PUGNACITY.

BY

WILLIAM LEE HOWARD, M. D.,
Westboro, Mass.

At a peace meeting in New York a woman speaker said the way to prevent war was to take away the toy soldiers of boys and substitute blocks and cut-out pictures.

Yes; this is a good idea but better still, when the boy gets to be twelve or fourteen years of age give him dolls to dress and have a teacher properly fitted to instruct him in the intricacies of lace concoctions and other delicate matters.

Yet still better, and absolutely a positive way to assure an attitude of peace-at-any price, is to castrate the male child. This will save time, is less costly, and certain.

The gradual emasculation by means of dolls, female instruction, mental application upon embroidery and study of poetry, the beauty of submissiveness, the pleasures derived from passiveness, takes some years, and also is dangerous because such a boy might fall into the hands of a complete man and thereby become a vigorous, muscular, coarse voiced, commanding male with the natural characteristics and proclivities of his sex.

The male who has not the pugnacious instinct is not fit to reproduce. The male whose pugnacious instinct has been weakened, suppressed—whether through false teachings or the knife—cannot reproduce

fit men in the former case, and of course not at all in the latter. Those which can reproduce only place upon the earth a mucilaginous replica of themselves.

The men and women who seem to believe that war among nations can be stopped by resolutions and documents, belong to one respectful and respected class; a class of persons who do not understand the psychology of sex and that pugnacity—or the inherent instinct to fight—is a primal instinct absolutely necessary for progress of individual or nation.

Whether this necessary struggle between man and man is with fists, weapons or brain, matters not, the forces fundamentally governing the instinct are purely sexual. When you weaken this fundamental force you weaken the ability to fight—brain or fist in individual, army and arms in nation. A man must fight for existence—always. A nation must be ready to fight for its existence. Both individual and nation lacking in pugnacity will go to the wall.

It is my sad fortune daily to see men so lacking in the pugnacious instincts that they are being pushed to the human junk heap by those of greater sex power—the power of the man. Without exception these men belong to two classes. The first are those whose early training kept them from rough and virile struggles with vigorous boys; held back from fighting, swimming, playing with developing lads, and tutored by maidenly persons who taught things they enjoyed, and rigidly avoided any tendency toward a natural curiosity of life's meaning. Hence we find these unfortunates have fallen into effeminate ways, fear and shame of natural impulses control them, timidity with their fellow men is their natural mien, with an acceptance of a feminine

passiveness in business; and they reach a point where they must put up some sort of a fight, they find they have neither the mental nor physical power.

The second class are of the same psychic and physical nature but have been reproduced by fathers of the former class. Thus it is easy to see how these deviates are increasing.

The same conditions which have resulted in lack of pugnacity—sexuality—in so many men, not infrequently lead to the opposite extreme in others. The large number of useless and helpless youths; loafers, gangsters, ne'er do wells, is due to their leaving school early—too early. And they leave school because the teaching of women, their view point of life, their coloring of facts in life by feminine tints, is repugnant, uninteresting and repelling. A boy who hears a lesson in history ended by the beauty of peace, and how Napoleon brought ruin upon the world and that he should be forever cursed, will not long have much confidence in his teacher. He wants to hear more about the fighting and less about the peace negotiations. He don't get it; and if he scraps himself, gets punished; all too soon he loses interest and leaves the school.

Teachers who are married, teachers who have boys, will act somewhat differently, but even here there will be an injurious feminine influence upon the sexuality of the boy—upon his necessary development of pugnacity.

It is an old saying that "you cannot have your cake and eat it too." You can not have absence of pugnacity and possess virile reproductive powers. The two are complementary. The internal stimulant that gives force to muscles, is the effect of the elements in the secretions of the thyroid, testicles and

other ductless glands—facts our women teachers do not know.

Those women who say the boy must be taught that war is a sin, and those men who claim that peace is for the good of man, are under the erroneous impression that man as a physical being differs from other animals.

He does not. Physically he exists and reproduces as all other animals. His mentality is one of degree, not difference. Psychically also, this statement holds true. How far he may reach in a better understanding of the Great Force, is here not in question. We are dealing with the human animal as he is. We can not change the laws of biology unless we can change the laws of the whole Universe. Yet there are those who believe we can change the primal instinct of man by teaching.

We can weaken the primal instinct, we can distort it, we can shunt it into somewhat different channels, but it remains ever a menace to man's progress when so treated.

But this must be clearly comprehended; that lack of sex and power means lack of ambition, curiosity, investigation—mental progress. Through the forces which make for virility arise the forces for manly deeds. Manly deeds bring self respect, honor, a desire to understand the innerself. A man possessed of the fighting spirit and trained to control it until self-respect demands its operation, is the man of peace in its true sense. Such a man is not querulous, not quarrelsome, is careful of his words and promises, avoids gossip and slander. In other words, he is saturated with maleness. So should a nation of men be.

The male gossip, the scandal monger, the individual who quarrels by the use of words, the back-biter, the evader, is one

weak in sexuality-pugnacity. Such a person has small muscles, timid chest, feminine back and hips, mental resiliency in dispute or statement, avariciousness and the inability to uphold responsibility.

These are not the attributes of full femaleness, but the alloy of the two sexes—a negative condition. The lack of pugnacity in the male and the absence of the maternal instinct, make this individual a man of fear-inspired peace and a factor in promoting national weakness.

The male thruout all living nature is a fighter. The timid and effeminate are weeded out of life's scheme. The male fish is preeminently a fighter for home and family. The ewes will stand and watch a fight between rams, each wanting the victor as father for her lambs. Buck, bull, stallion, man, are motived by the sex instinct—pugnacity.

The steer, the gelding, are beasts of peace. They are so thru man's artificial methods of making them peaceful; depriving them of those internal forces which govern pugnacity—sex influences. The boy brought up by females, given the playthings of females, driven by women's desires to women's ways of thinking, dolls to dress, prevented from playing football, boxing and wrestling, punished if he gets black eyes or soiled clothes, is being artificially made a shameful youth of peace-at-any-price—psychically being emasculated.

Such false training has a direct physiological effect which no proper training in later life can correct.

We all know the effect of emotions upon the secreting glands, but we have not all realized the direct effect female training unconsciously has upon the secretions of those ductless glands which develop sexuality.

These glands need their normal stimulation coming from the outside. As the thymus gland in the little boy is pouring out its elements which go into the blood stream to build male bones and flesh, it receives a shock when the boy is given toys to play with which are intended to stimulate the girl's instincts. This shock prevents the normal development of male structure; bones, muscles, lungs—the whole male anatomy. Disgusted, starved, the thymus and probably the anterior portion of the pituitary give up before their time.

Now enters the thyroid. It should be ready to continue the work and stimulate the growth and function of the testicles. But the stimulation coming through the doll dressing, the suppression of pugnacity, the howling, yelling, roistering impulses of the developing male shunted into reading poetry, peace-at-any-price pleas, and smug platitudes of unaroused females have all produced constant shocks.

There is consequently a deficiency of thyroid juices, a defect in testicular activity, and the unfortunate reaches adult age woefully lacking in pugnacity—maleness.

He is a man of peace because he is not male enough to be a man of war. The same state brought about by normal physiological age makes the old man a man of peace. The former is an injurious reproducer because his germ plasm is wanting in pugnacious instincts of the first power.

Not one drop of material coming from the ductless glands during development of male or female can be turned from its proper function without ultimately affecting the sexuality of the sexes. By sexuality I do not mean the mere physical sexual powers. I mean those higher and progressive forces. In the male self-respect, self-control, physical vigor, respect for all women and

girls—the protective instinct—the knowledge of self power, the value of conserving the purely sexual forces, ambition, forthrighteous, frankness and honesty with fellow men, and the ability to fight when honor and necessity compel as well as the willingness to wait, consider and strive for a peaceful solution with honor left intact.

THE ALBUMEN REACTION OF ROGER IN THE SPUTUM.

BY

A. K. MOILLIET, M. D.,
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It is a curious fact that so little prominence has been given in the U. S. A. and Canada to this reaction and its bearing on the diagnosis of pulmonary tuberculosis, especially in view of its extreme facility and rapidity.

According to Dr. Smolizansky who practiced the reaction on a large scale at the French sanatorium of Bligny, and part of whose thesis is published in the *Gazette des Practiciens*, April 15, 1912, the following is the technique:

(1) The patient should be told to expectorate in a special vessel, as if for a bacteriologic examination.

(2) It is of first importance that the sputum should be expectorated from the lungs or bronchi by an expulsive effort during coughing.

(3) All blood streaked sputum must be rigorously eliminated.

(4) The sputum should be examined as soon as possible and before fermentation.

(5) The sputum thus obtained is diluted in a test tube with equal parts of distilled water and thoroughly shaken.

(6) Add a few drops of acetic acid to

precipitate the mucus and nucleo-albumen and thoroughly mix again.

(7) Pass the whole through wet filter paper.

(8) To prove if the mucus is completely precipitated add a few drops more of acetic acid, the absence of cloudiness indicating that the quantity of acid has been sufficient.

(9) Test for albumen as in the urine by the nitric acid ring test.

According to Professor Roger "the test for albumen allows us to divide expectorations into two groups. The first do not contain albumen, but are due to a secretion more or less abundant from the bronchial mucosa, and indicate simple or chronic bronchitis or emphysema; the second which contain albumen refer to a more profound process; they are connected with an inflammation, are exudative; their presence permits the elimination of a simple bronchitis."

"Constant and often intense in pulmonary tuberculosis, the albumen reaction is equally frequent but ordinarily less accentuated, and transitory, in the acute pneumonic infections, broncho-pneumonias and amongst certain cardiacs and albuminurics. Its absence has a considerable significance, since it permits one to eliminate bacillosis."

Dr. Dienzéide has stated: "In cases only suspected of tuberculosis, presenting only the symptoms of loss of flesh, fatigue, dyspeptic and cardiac troubles or simple respiratory modifications, Surgeon Major Levy has confirmed the presence of albumen in the sputum, varying from 51—80 per cent. in the clinical groups where soldiers were examined, and as the diagnosis became more probable the albumen reaction became more frequent."

"In confirmed tuberculosis the presence of albumen may be considered constant and the albumen reaction is always positive in sputum containing bacilli."

For several years I have been applying Roger's albumen test for the examination of cases of incipient miners' phthisis. It appears particularly important in these cases for the following reasons:

(1) The incurability of this disease once it has passed a certain stage.

(2) The remarkably good results obtained by treatment in the early stages before the lung tissue has been permanently damaged and fibrosis has taken place, with invasion by the tubercle bacillus.

(3) The extreme difficulty of determining what stage of the disease we are dealing with, by means of the physical signs, since bronchitis is found in nearly all cases of workmen who have used compressed air drills for any length of time.

(4) The uselessness of the usual microscopic examination of the sputum in these cases, since in miners' bronchitis, dust particles appear in abundance in the expectorated matter, while the presence of elastic fibres and tubercle bacilli indicate an advanced stage of tissue destruction in the majority of cases.

Possibly by means of this simple reaction we may be able to determine exactly the time when the initial miners' bronchitis is changing to the deeper structural inflammation which leads to the incurable fibrosis and infection by the tubercle bacillus.

With the very limited means of pathological investigation at the writer's disposal he is not in the position to make any very positive statements on this point. He can, however, affirm with some certainty, having examined the sputum of over one hundred cases when practicing at a mine in the state of Pueblo three years ago, that the reaction becomes more and more marked in direct proportion to the number of years spent in a dusty atmosphere.

It is in the hope of arousing the interest of someone better able to conduct such an investigation that this short article has been prepared.

COMPULSORY HEALTH INSURANCE.¹

BY

JOHN P. DAVIN, M. D.,

Representing the Medical Society of the County of New York, New York City.

Gentlemen of the Committee:

To labor and to capital this bill merely means an added burden. To medicine it means extinction. I am delegated to protest therefore not only against the medical provisions of this bill, but against its principles and also against the appointment of a commission to study and report in the future on this subject.

The bill for compulsory health insurance was killed last year. It will be killed this year and we do not want to feel that it is coming back again like the father of the hera in "The Play-boy of the Western World," to be "killed again for the third time." Admittedly this bill is opposed by labor, capital and medicine. What then is the mysterious power behind it?

This I think you will find disclosed in the following extract from an article called "Adolescent Insanity and National Health," by Prof. Charles W. Burr, of the University of Pennsylvania, which I submit to your attention:

"The kind of altruism which is being widely preached in America at the present time, is making life much easier for a great

¹ Address before the judiciary committee of the Senate of New York on the hearing on the Mills bill for Compulsory Health Insurance.

many lazy people, but instead of improving the race is injuring it. In too many instances it is aiding people to live, whom it were better to allow to die. It forgets too often that the strong and the healthy also have rights. Its honest adherents are so ruled by their emotions, or rather by their sensations, that they do not stop to think before they act. They see an evil and in their hurry to correct it inflict much greater evils. It increases tremendously the parasitic class who today, as always, are perfectly willing to live off the fruits of other people's industry. The specific movement, technically called 'social service,' the result of a genuine spirit of altruism, needs a little reform in its methods and a somewhat greater care in the choice of its agents, or its possible usefulness will be greatly diminished. The idea that a man is his brother's keeper is a beautiful and normal thought, but when it is interpreted to mean that the strong man is to be 'wet nurse' to the weakling, and carry him thru life, and work that he, without exertion, may enjoy the luxury of living, the weakling is going to enjoy himself without responsibility, propagate his kind, and weaken the race. No work needs greater wisdom and maturity of mind than social service, yet far too often its agents are enthusiastic, ignorant and conceited young men and maidens who feeling that they have a call to save the world, entertain unlimited pity for the unfortunate, an overwhelming sense of the wickedness of the strong and successful, have no idea of justice, no training of any kind, little or no worldly wisdom, but alas, not infrequently a desire to earn a living without hard work."

When politics begin to tinker with life and death it is time to call a halt.

This issue means a fight to a finish between practical politics and the practice of medicine. We owe it as a duty to our patients to protect them from an invasion of this kind, no less than we would from one of disease.

Compulsory health insurance is the most ambitious medical proposition since Col. Sellers first offered his celebrated "external, internal and eternal remedy for human ills." Doctor Warren of the Public Health Service has figured out that there is something approaching a billion in it for the doctors. Col. Sellers only asserted of his remedy that "there were millions in it" for his dupes. But for the limitless possibilities of the public funds, and for the modern craze for lay interference with the care of the sick, the intricacies of this bill would not receive serious consideration anywhere outside of an economic Bedlam. More or less politely disguised this has been the attitude of both employer and laborer toward it ever since Samuel Gompers called its original proponents "scientific ham-fatters."

A wage of \$100.00 a month, or less, presupposes that capital and labor have not failed in their obligations to the wage earner. The animus of this measure lies in the accusation that this wage will not enable those earning it to receive proper medical attention unless aided by the state.

Confiscation by the state of the ancient heritage of the medical profession, the care of the sick poor, is without either right, reason, or justification.

The disciples of compulsory health insurance are self-constituted, self-appointed champions of what they call medical progress in this country. If publicity and progress are synonymous terms in medicine to-

day, they are certainly entitled to this distinction.

The cry for relief at the present time is not due to the high cost of sickness to the poor, but to the prohibitive price of "specialism" to the "better classes."

Among those who would thus make us bondmen to the state, instead of free and independent practitioners of medicine are the men who are indirectly responsible for obnoxious drug laws, as well as directly responsible for the monstrous injustices to the medical profession of the Workingman's Compensation Law. To submit tamely to further coercion from this quarter, before we have disciplined these offenders and corrected their mistakes, would be to leave them masters of the medical situation and us their involuntary and rebellious underlings.

As a preliminary to this measure, and in accordance with modern principles of progress, a "campaign of education" was inaugurated in order to uproot and destroy the traditional respect and confidence hitherto attached to the profession of medicine among all peoples and in all lands. This was initiated by a venomous attack on medical colleges by a layman, whose more recent attack upon general education has disclosed the fact that up to a few years ago he was himself but an obscure teacher in a provincial high school.

It had hitherto been taken for granted that this modern prototype of the Goddess of Learning had been spouted "full-fledged" from the wells of Jove's American counterpart in the regulation of human affairs. In the course of this crusade the horrors of charitable and medical institutions in New York have grown apace with the purifica-

tion of municipal politics in general. "Hospitals Disgrace City" was one of the headlines it called forth in the *Evening Post*. Even the morgue was muckraked and the indignities to its "pathologic exhibits" and "embryonic specimens" fully exposed.

One of the most venerable and eminent American medical men, whose reputation for scientific attainment and charitable endeavor is world-wide, was held up as an advocate of filth as a salutary thing in one of the institutions under his supervision. All the mystery of this villification is now exposed and explained. It was but the prelude to the universal "symphony" for compulsory health insurance. In much the same way, the astonishing official inquiry into the price paid for underwear by the wives of street sweepers found its solution later on in the cooperative institution established in the municipal building for the sale of silk stockings, corsets and lingerie at reduced rates to city employees.

It was once said by a prominent legislator that we never would have any issues in New York if it were not for the "fallen woman," the "glass of beer," and the "deck of cards." The glass of beer is now drained on Sunday with impunity. The principal houses of disrepute in New York at present—according to an official survey—are the eating houses, of which this official survey found only one "good" one out of four hundred and fifty (450) examined. These are now licensed under the sanitary code, after a physical examination of the waiters employed in them—a reversal of the practice obtaining in Germany.

Even now there is a bill pending to permit card playing for prizes at church fairs.

All these issues have now been replaced

by those relating to the "doctor," the "druggist" and the "undertaker." However much the doctor and the druggist may protest against this innovation, the undertaker will hardly do so since its provisions will net him between eight (8) and eleven (11) millions annually, according to the official death rate. To prevent any exploitation by the undertaker of this privilege a bill is now pending which compels him to apply an infallible test of death in all his cases. Even in this age of "service" we have too much respect for the politician to believe that he will willingly exchange his former activities for those pertaining to the "lying-in chamber," the "bed of sickness" and the "house of death." Nevertheless if these new duties are thrust upon him he will be a potent factor in scenes once sacred to "the family," "the doctor" and "the priest." Those who do represent him there will have to be his disciplined followers, whether as doctor, nurse or undertaker. That this, if brought about, will be a degradation of all concerned cannot be denied.

The banners which some still remember to have seen carried by the Total Abstinence Benevolent Societies in the Patrick's day parade, bore the inscription:

"We Visit the Sick—We Bury Our Dead." Whom of us would like to turn out in a political parade under a banner thus inscribed?

Except to notice a few details that have not been touched upon, as far as I am aware, I shall not attempt to "dissect" a bill which has already been "vivisected" by labor, capital and medicine. If in it there is no restriction of medical benefit or cash payment such as obtains in mutual benevolent societies for cases of alcoholism, ven-

ereal disease, or any other condition, originating in the culpability of the beneficiary, a man might come under its benefits, as far as I know, if he got his disability in an attempt at robbery or murder. The free treatment of venereal diseases would be in line with one of the city's most recent benefactions, of which the Venereal Museum at Coney Island is an example. This only lacks the services of a "barker" to make of it a perfect sociologic exhibit, according to the most approved sociologic opinion.

That compulsory health insurance is a remedy for poverty is a proposition not worth discussing. The things that keep poor men poor are the ever rising cost of the necessities of life—food, rent and clothes. No matter how wages soar, the balance is forever adjusted to extract a compensatory outlay that forever keeps the poor when sick at the border of destitution.

The cheapest commodity in the world today is, as it has always been, medical service to the poor. Governmental aid to the working man is no panacea for these other evils. It is equally false that this form of practice under the state will advance medical science and preventive medicine.

All the great discoveries in medicine came from individual effort. There is no initiative in bureaucratic medicine. All that public health medical service is capable of doing is to capitalize and exploit to the public the work of individual medical men. There is one way, however, by which medical science can be advanced under it; and this, while it is hoped for by the advocates of compulsory health insurance, is not now openly advanced by them as an argument.

In descanting upon German advance in scientific medicine resulting from compul-

sory health insurance, no mention is ever made of the universal system of autopsies practiced in the German public institutions. With us, except in rare cases, the patient's family has still a property right in his body after death, even if he has been a recipient of the state's benevolence during life.

The insurance companies have absolute right to examination after death, but this is rarely exercised. Combine the rights of the insurer and the power of the state, as it would be under this bill, and the system of universal autopsies advocated in the following opinion will most inevitably follow.

In an article called "The New Tendency" in the weekly bulletin of the Department of Health, published at the expense of the taxpayers, it is stated:

"We wonder how many members of the medical profession realize the profound change that is coming over the relation of the physician to the state. Once the public realizes the tremendous percent of error, even under the best hospital conditions, it is to my mind a close question whether the medical profession will feel more humbled or the layman more alarmed when universal and recorded autopsies exhibit the limits of medical capacity."

This, it might be said in passing, is about the limit from one who aspires to be the family physician of New York City. The profound change here alluded to is one that will prevent the private family physician from interposing to prevent unnecessary autopsies by the state under the guise of the advancement of medical science.

To close this discussion without a reference to Bismarck and Lloyd George, would be like denying the devil his due, or giving the play of Hamlet with the part of Hamlet left out.

We take this opportunity to commiserate with, and to extend our sympathy to those of our brethren who have been the victims under compulsory health insurance of the Prussian autocrat and the British democrat or demagog—whichever opinion one inclines to. Their spoliation of the practice of medicine to serve their political ends will in time recoil upon them and the crumbling structures which they have erected upon this sacrilege. There may be some excuse for Bismarck who had to weld an empire thru control of the pocket nerve of German industrialism when he appropriated this project of German socialism. There is no such defense for Lloyd George—born in poverty and reared in privation. We have all heard the story of his early childhood, when he and his sister tried to prevent the sheriff from entering the humble home where his father lay dead, by placing stones under the gateway.

Was this invasion which he tried to prevent one to collect a legal debt for medical services, or was the death which shadowed that home due to lack of medical services for want of money to procure it?

I doubt it! But if it was, the medical men of Great Britain deserve what he has since meted out to them. If it was not, he deserves the execration of a profession whose standards demand service to all in distress as a solemn obligation of its calling.

It has been said that the British workmen were compelled to barter their "birthright" for a "mess of physick." If medicine is to be reborn, as it is claimed, under compulsory health insurance, it will be compelled to sacrifice its "after-birth" for a "mess of legislation."



Conducted under the Editorial Direction of Dr. J. W. Wainwright.

EMETIN—A BRIEF STUDY OF A REMARKABLE DRUG.

It would almost seem—with the introduction of emetin hydrochloride in the treatment of amebic dysentery, and possibly of certain other diseases in which the ameba parasite is the predominating cause—that a specific had been found. Of course it has been known for some considerable time that ipecacuanha exercised a remarkably inhibitive effect on amebic dysentery, but at the same time, it was evident that the drug had several disadvantages which more or less restricted its therapeutic value. And, moreover, in some of the most severe and advanced cases of amebic colitis, it was frequently impossible to administer sufficient ipecacuanha by the mouth to save the patient. It was Dr. Leonard Rogers, of Calcutta, who first showed the great prevalence of amebic dysentery in India and demonstrated that ipecacuanha was a specific remedy for this form of dysentery. Dr. Vedder pointed out that emetin, the chief alkaloid of ipecacuanha in very high dilutions killed cultures of non-pathogenic amebae, but Rogers found it to be equally effective against pathogenic amebae in dysentery stools. These results led Rogers to experiment with the soluble salts of emetin hypodermically. His clinical investigations were highly successful, and now emetin appears to have taken its place with mercury and quinine as one of our few specific drugs.

Before discussing emetin from the therapeutic standpoint, it may be well to refer briefly to ipecacuanha and its pharmacologic action. Ipecacuanha is the root from *Psychotria Ipecacuanha*. It contains about 2 per cent. total alkaloid. Three different

alkaloids are present: emetin, 72 per cent.; cepheline, 26 per cent.; and psychotrine, 2 per cent. Emetin is a quinoline derivative and is methyl-cephaline, the relationship between emetin and cephaline being the same as that between codeine and morphine, or caffeine and theobromine respectively.

Small doses act as expectorants. Larger doses exert an irritant action to the whole of the gastro-intestinal canal, resulting in vomiting and diarrhea, and depressing the central nervous system. If ipecacuanha is injected subcutaneously, pain and inflammation followed by suppuration and the formation of an abscess are produced at the seat of inoculation, and symptoms of acute irritant poisoning rapidly develop very similar in character to those seen when arsenic, antimony, iron, or any of the more irritant of the vegetable purgatives are injected. The vomiting produced by therapeutic doses of ipecacuanha is peripheral in origin, because the effect is brought about as soon as the drug reaches the stomach, and in quicker time and in smaller amounts than can be produced by injection. When given subcutaneously the automatic movements of the stomach and intestines are greatly increased; vomiting and purging are a direct result of this action. Its mode of action in the treatment of tropical dysentery is not definitely known; it probably attacks the parasite as it does other simple forms of protoplasm. The action of cephaline and emetin is the same as that of ipecacuanha. Both these alkaloids are emetic, but the presence of the extra CH_3 group in emetin renders it about half as toxic as cephaline, but whilst both constrict peripheral vessels, emetin has the more marked action.

Dr. F. B. Sigworth in the *Journal of the American Medical Association*, (November 13, 1915) discusses emetin from the thera-

peutic point of view and says that Kunkel in the *Handbuch der Toxicologie*, (1901, p. 841) describes the effects of toxic doses of emetin from 50 to 100 mg. per kilogram of body weight in the cat and dog, but Dr. Sigworth records the results of experiments which go to show that as little as 2 mg. of emetin per kilogram administered intravenously may cause some depression at times, while doses of 8 to 12 mg. per kilogram cause general depression with weakened and accelerated heart and lowered blood pressure. There is apparent improvement after a short time, but usually these doses are fatal within forty-eight hours. The effects of the oral administration of emetin in solution are about like those seen after intravenous injection, but death may occur with general paralysis and cardiac failure within three minutes after the intravenous injection of a single large dose. It is generally stated that emetin causes emesis only through its action on the gastric mucous membrane, but it also causes vomiting after the intravenous injection into a dog from which the gastro-intestinal tract has been removed, hence it is also capable of acting on the vomiting center directly. Several authors state that the toxicology of emetin is not very important and von Jaksch, in *Die Vergiftungen*, (Ed. 2, 1910, p. 493) states that the prognosis in case of poisoning by it is favorable. Emetin is also absorbed from the gastro-intestinal tract when given in solution more readily than when administered in the form of a preparation of ipecac. Kunkel says that it was formerly believed that emetin induced a specific anemia of the lungs, as a consequence of which it was used in hemoptysis. He states that this belief probably arose from the observation that the pulmonary vessels of animals that had been killed with emetin were empty, a condition which he explained as being due to the maximal dilation of the vessels of the splanchnic area, with the consequent drainage of the pulmonary vessels.

Professor V. Gabbi of Rome published in January, 1916, an excellent monograph on amebic dysentery, in which he stated that in rare instances intramuscular injections of emetin were ineffectual, when recourse must be had to other drugs, such as decoction of *Simaruba Officinalis*, a wine made from *Rokra*, a Madagascar plant; the seeds

of *Brucea Sumatrand*, or a decoction made from *Ailanthus Glandulosa*.

In the treatment of amebic dysentery, undoubtedly emetin has proved to be a remedy of the very highest value. The results obtained by Rogers, although the number of cases successfully treated were scarcely sufficient to definitely establish emetin as a specific for amebic dysentery, were yet of such a marked nature as to go far to justify this belief. Furthermore, Rogers' experiences have been duplicated and substantiated to a greater or less extent by several observers and practical medical men. Captain R. G. Archibald, Pathologist, Wellcome Tropical Research Laboratories, Khartoum, writing in the *Journal of Tropical Medicine and Hygiene*, (August 16, 1915) asks the following questions: (1) Can amebic dysentery be cured, i. e. can all the amebae in the patient's system be killed? (2) If they can be killed, is there any means of recognizing when this has been effected? He answers them in this wise. With regards to the first question it may be stated that as a result of experience following the advent of Rogers' method of treatment—by means of intra-muscular or intravenous injections of emetin—amebic dysentery appears to be scientifically curable. By the term "cure" is meant that the amebae of a definite infection have ceased to live in the patient's body. How can this cure be determined? The knowledge can only be definitely obtained by repeated careful differential leucocytic counts, especially in cases unaccompanied by other protozoal infections, such as malaria. G. M. Niles, writing in the *American Journal of Medical Sciences*, (October, 1914) is somewhat chary of enthusiasm as to the virtues of emetin as a therapeutic panacea for amebic dysentery. He says, as contended by Allan, the evidence at present, in regard to the permanence of absolute cure by emetin is extremely meager. Most observers admit that emetin always kills the active amebae, but not those in the cysts, the latter being responsible for the relapses. Baermann and Heinsmann in Sumatra have pointed out that emetin seems to exert but little effect on cysts and there is considerable variation in the different preparations now on the market. Niles himself employed the salts on four patients, three of whom were still well at 17, 11 and 10 months respectively.

Dr. George C. Low in the *Practitioner*, (March, 1916) after pointing out that the *entameba histolytica* is the true amebic dysentery organism, described his treatment of acute cases of amebic dysentery as follows: Persons suffering from a severe form of the disease should be put in bed and kept there. If pain is severe and tenesmus troublesome, a hypodermic injection of morphia, one-sixth of a grain may be administered at once, or in place of this, a small starch and opium enema. Hot applications or turpentine stupes may be applied to the abdomen and the patient should be kept warm by hot water bottles. Then the bowel should be thoroly cleaned out by means of castor oil, and injections of emetin may be begun at once if the case is bad, or if not very acute, after the oil has acted. Low injections, a one-grain dose of emetin hydrochlorid at a time, and generally gives a course of 12 one-grain injections, one injection a day, or two daily at the beginning. If the patient is admitted in the morning, one grain of emetin may be injected at once, a second injection of one grain being given in the evening. If he comes in the afternoon, one injection of one grain is given that evening, and on the following day, according to the severity of the case, another in the morning and another at night, or only one in the evening. In some cases two injections are given daily for two or three days, passing on after that to one a day; in others, only one injection of one grain daily is given from the beginning. The time of administration must be varied according to circumstances. Low states that, as a rule, the response to emetin is certain and quick. After three or four injections an improvement will be noticed, fecal matter appearing, while the blood and mucus diminish, and finally disappear. G. J. Jones in the *Journal of the American Medical Association*, (March 20, 1915) expresses the conviction that emetin hydrochlorid while a valuable amebicide, if used alone will not cure amebic dysentery and relapses will soon occur. The same statement is equally true of ipecacuanha if used alone. After an experience with each of these drugs employed singly, he has reached the conclusion that emetin given by hypodermic injection, accompanied or followed by ipecacuanha by the mouth will cure most cases of intestinal amebiasis. This view is

based on the hypothesis that emetin, employed hypodermically reaches the entamebae which are in contact with the blood stream deep in the ulceration, while ipecacuanha destroys the entamebae in the intestinal canal or outer margin of the ulcerations; neither of these drugs is effective in the field especially acted on by the other. Happy tho the results of thus treating amebiasis, the fact should not be overlooked that emetin is an amebicide and has little to do with the healing of ulcerations. Every case of amebiasis, after this treatment should be considered one of ulcerative colitis and be treated from a dietetic point of view. At the same time every effort should be made to enhance bodily resistance by change of climate, tonics, etc., to obviate the distressing sequelae characteristic of the disease. Lyons in the *Southern Medical Journal*, (February, 1915) thinks that in amebic dysentery it is not always a simple matter to detect cysts in the stools, so that it is advisable to give at least three courses of the drug. The secondary courses may be given after intervals of two or three weeks and need not last for longer than four or five consecutive days. In cases of liver abscess, the majority of which are surgical, emetin should be given before, when possible, as well as immediately after the operation. For adults a dose of one grain daily will suffice. Recent literature reveals a very noticeable reduction in the death rate of liver abscesses when emetin is employed. In small abscesses which are free from secondary infection, simple aspiration of the pus with reinjection of a grain of emetin has resulted in cures. From a survey and analysis of the literature concerning the employment of emetin in the treatment of amebic dysentery, certain salient facts may be gleaned. Emetin assuredly kills the parasites, when used hypodermically and in proper doses, and it is superior by far to ipecacuanha or even emetin administered orally for the same purpose, because it is less toxic and less irritant. However, careful clinical observation and experience appear to have already brought out the point that emetin used alone is not perhaps a permanent cure for amebic dysentery, but requires the conjunction or sequence of ipecacuanha administered by the mouth for a permanent cure. As yet, no absolutely dogmatic state-

ment can be made, but that emetin given hypodermically kills a large proportion of the amebae, is certainly true, a fact which after all constitutes a long step in the direction of a curative treatment of amebic dysentery. Doubtless further research and clinical experience will lead to the discovery of an effective means of employing emetin with the aid of other drugs, and thus finally solve the problem of how to successfully treat amebic dysentery. The point raised by Jones is well taken, that after treatment by emetin and ipecacuanha, measures should be adopted to heal the ulcerated and irritated gastro-intestinal tract, which has not been benefited, but usually rendered worse by the emetin and ipecacuanha.

In a work published recently written by H. Vincent and L. Muratet (*Dysenteries Cholera Asiaticque and Typhus exanthematique*) these authors are not so enthusiastic with regard to emetin in the treatment of dysentery as are others who have employed it. They incline to the view that it is well to use emetin in combination with arsenobenzol.

Since the outbreak of war, and in the campaigns in the Far and Near East all the forms of dysentery have been common. During the Gallipoli expedition, there occurred a great deal of amebic dysentery. Consequently, knowledge as to the value of emetin in its treatment has been greatly increased. Although evidence is convincing that emetin is the most effective drug known in the treatment of amebic dysentery, it is apparent it is not nearly so effective when dealing with the cryptic or latent cases. These are the carriers in the true sense of the term and the treatment of entamebiasis by British physicians has been largely concerned with the problem of freeing the chronic "carriers" from their infection. Cysts will disappear in many cases only to return, they will persist despite the emetin treatment. H. H. Dale in the *London Lancet*, (July 29, 1916) thinks that the relative failure of hypodermic treatment with emetin in cystic conditions may be explained by the entameba being more or less completely shut off from the circulation and tissue fluids of the patient. Accordingly, Dale was led—in cases refractory to the hypodermic use of emetin—to suggest the oral administration of the alkaloid in a form which gave promise of the advantages

of the ipecacuanha treatment with freedom from its special difficulties and drawbacks. The compound which he advised is a double iodide of emetin and bismuth. Dale considers that this mode of treatment has given very satisfactory results. Low, referred to previously, who in conjunction with Clifford Dobell has been employing emetin-bismuth iodid, says in the *London Lancet*, (August 19, 1916) that they are convinced that emetin-bismuth iodid is far more efficacious than emetin hydrochlorid given hypodermically in removing the cysts from the feces of chronic carriers.

W. Beresford Robinson writes in the *Practitioner*, (October, 1915) on the value of emetin hydrochlorid in the treatment of mucous colitis, dysmenorrhea, phthisis and intestinal hemorrhage. French physicians have on more than one occasion stated that good results have been obtained from its exhibition in phthisis and gastric ulcer. Robinson has had success in treating the hemoptysis of phthisis with emetin hydrochlorid and he has found that the administration daily of two-third-grain doses of emetin in cases of gastric ulcer rapidly controlled hemorrhage. In one case of mucous colitis with hemorrhage the administration of emetin had a beneficial and stypitic action. In the treatment of dysmenorrhea Robinson has employed emetin frequently and with highly satisfactory results.

In the treatment of pyorrhea alveolaris, emetin has gained a considerable vogue, and judging from reports, which owing to the short period in which it has been employed are necessarily somewhat scanty, the results have been good. H. J. Gosline of the Danvers State Hospital, has published a preliminary report of the results of the treatment of pyorrhea alveolaris and allied conditions with emetin hydrochlorid at the Hospital. Results in a certain sense, show controls, in that, of the twelve cases of spongy gums those treated locally showed only moderate or slight improvement, while those treated with emetin in addition to the local treatment, showed 87.5 per cent. marked improvement. A group with loose teeth and spongy gums showed 78.6 per cent. marked improvement, but in no case with loose teeth did the teeth become firmly set once more. At this same institution they are now engaged in examining a large number of cases that appear clinically to be

pyorrhea. In several cases the amebae have been demonstrated.

In the treatment of pyorrhea alveolaris from one-third to one grain of emetin administered daily from three to four days is said to cause usually a disappearance of the amebae, but further experience is necessary to determine how many injections will be needed to maintain the cure.

In regard to dosage and methods of administration of emetin some reference has been made. But it will not be out of place to quote briefly Rogers' remarks on the subject. According to this author, the hydrochlorid and hydrobromid of emetin are equally effective in the treatment of amebic disease, but the former is more convenient on account of its great solubility. Emetin should only be used orally when there is any difficulty in injecting it hypodermically, and never if it can be avoided in serious cases. It is advisable to inject a total of one grain in the twenty-four hours for three or four days. In severe cases a grain at a time may be given and repeated two or three times a day. Intravenously from a half to one grain may also be given at a time to adults with perfect safety. Large amounts may be given to children with amebic dysentery, one-third of a grain in those of about eight years of age, while one-sixth of a grain may be given to younger patients.

Emetin is indicated then in all conditions in which amebae are present. This appears to have been conclusively established. Recently it has been employed in divers affections, but it seems probable that its chief value lies among the protozoan diseases.

As to whether emetin injections radically cure amebic dysentery or other diseases caused by amebae is a point that has not been settled. Rogers is of the opinion that emetin used hypodermically does so, while other observers hold that emetin used hypodermically alone will not effect a permanent cure, but that in order to achieve this result, ipecacuanha must be administered by the mouth, or other modes of treatment must be employed in conjunction with emetin. So far as can be judged up to the present, emetin is perhaps as much of a specific in the treatment of amebic diseases as is quinine in malaria or mercury or salvarsan in syphilis. Quinine seldom permanently cures malaria, nor does salvarsan or mercury cure syphilis. They all destroy the

germs of the disease when they come into contact with them, but unfortunately they rarely do so with all the infectious organisms. In the case of amebic dysentery, emetin hydrochlorid given hypodermically does not destroy the cysts, a fact which is responsible for the relapses, but emetin-bismuth iodid from accounts received up to the present time seems to do so. Emetin is an effective amebicide, and with further experience it will probably be employed in such a manner that amebic diseases will be wiped out.

Oil of Chenopodium in the Treatment of Hookworm Diseases.—Thornburg, (*Journal of the Missouri State Medical Association*, February, 1917) reports on the advantages of this agent in the treatment of this complaint, advising a brisk purge before giving the oil of chenopodium to clean the intestinal tract of accumulated mucus and detach the parasite in which they are partly embedded. He declares that thymol is a favorite remedy, but that care should be exercised in administering thymol to avoid untoward results. Thymol should never be given in oil is a safeguard upon which Thornburg insists. The author declares that Keith of Singapore reports upon the treatment of hookworm disease in over a thousand cases with the oil of chenopodium without a single case of ill effects. He gives ten minims in a capsule after a fast for three mornings in succession, to be followed by castor oil two hours after the third dose of chenopodium oil. The patient should then receive a simple nutritious diet, with fresh air and such tonics as may be required in individual cases to clear up anemic and other abnormal conditions.

Mercurialized Serum and Bichloride of Mercury.—Pittenger in the *New York Medical Journal* (January 27, 1917) in an interesting article upon the above, observing also the comparative toxicity when injected intramuscularly, intravenously and intraspinally, in dogs, concludes as follows: Mercurialized serum, whether used intramuscularly, intravenously or intraspinally, is equally toxic as corresponding amounts

of plain bichloride of mercury. The addition of an excess of serum to bichloride of mercury does not reduce its toxic properties but merely deprives it of the property of destroying tissue by precipitating and then dissolving the albumin of the tissue, without changing its toxicity or therapeutic efficiency. Intramuscular or subcutaneous injections of mercurialized serum are practically painless and not followed by sensitiveness, pain and sloughing, which usually accompany injections of the plain bichloride. Intravenous injections of mercurialized serum are not followed by pain or sensitiveness at the site of injection. Overdoses of mercurialized serum when administered intravenously produce the same untoward effects, such as blood in the stools, vomiting, retching, markedly increased and troubled respiration, etc., as plain bichloride of mercury and care should be used, therefore, not to produce toxic effects by overdoses or administration at too frequent intervals. Mercurialized serum in proper doses may be safely injected directly into the spinal canal. In systemic syphilis very favorable results can be obtained by the intramuscular or subcutaneous injection of mercurialized serum. Intramuscular or subcutaneous administration of mercurialized serum is to be preferred in the treatment of systemic syphilis, except in patients where quick results are imperative, in which case the serum may be given intravenously.

Apothesine, a New Local Anesthetic.—

C. W. Allen, (*New Orleans Medical and Surgical Journal*, March, 1917) describes this new agent to produce local anesthesia as the cinnamic ester of gammadiethylanimine propyl alcohol hydrochloride. It occurs, he writes, in small snowwhite crystals, melting at approximately 137° C. It is easily soluble in alcohol; very soluble in water; slightly soluble in acetone and ether. He has used the agent for several months and is very favorably impressed with its action; has performed operations under apothesine, anesthesia in hernia, hemorrhoids, fistula, varicocele, circumcision and plastic operations. He uses a ½ per cent. in a 4 per cent. sodium chloride solution with five drops of adrenalin

chloride solution, 1 to 1,000 to each ounce. The anesthesia was complete in all cases and invariably lasted more than an hour. There was no irritation, while wounds healed as well as after the use of any other anesthetic. No toxic or other unpleasant effects noted, altho large quantities were purposely used; as much as four ounces of the above solution in one case, representing nearly ten grains of apothesine in one case.

Hot Air Treatment of Inoperable Peripheral Gangrene.—

Gilman Thompson, (*Medical Record*, December 23, 1916, strongly recommends the use of dry hot air to relieve pain, alleviate stench, and immunify the tissues. Air heated to 150° F. may be directed thru a small stove pipe from a Bunsen burner to the affected parts. When there is no gas to be had, then an electric toaster can be made to furnish the heat while an electric fan directs the current of hot air toward the gangrenous tissue. It is better to have the extremity uncovered during the hot air treatment.

Coagulose.—Ogloblina, (*Ronsky Vratch*, September 24, 1916), (*New York Med. Journal*, January 27, 1917, reports observations on ten cases of hemorrhage in which coagulose was employed as a hemostatic. The effect of this agent was studied not only clinically, but by Burker's method to determine the coagulability of the blood. The hemorrhages were due in five cases to diseases of the liver with jaundice; in one, to disease of the lungs; in one, to pancreatitis with hematemesis; in one to postoperative condition of the wound; and in one to traumatism. In the case of hemoptysis due to pulmonary gangrene the injection of coagulose had no effect, nor was there any effect noticed in the other cases, except those due to diseases of the liver. In these cases the coagulability of the blood, which was very low before the injection of coagulose, was markedly increased, in some cases more than twice. The author concludes that coagulose is a valuable agent in preventing postoperative hemorrhage in conditions of the liver accompanied by jaundice.



Pituitary Solution in Pneumonia.—

There is an excellent means of replacing the circulatory stimuli which are lacking when hypoadrenia becomes a part of the symptom-complex of pneumonia. The active principle of the posterior lobe of the pituitary gland exerts just the kind of influence that is greatly needed. It is a circulatory stimulant of undoubted merit, for it increases the power of the heart, lessens its excessive rate and raises the blood pressure.

The writer has frequently found that an injection of one mil (or less) of pituitary solution is a valuable means of increasing waning circulatory efficiency of a functional character, and sometimes the therapeutic results of a single small dose are as marked in pneumonia as they are in the better known obstetrical application of the same remedy.

Two recent cases may be cited to lend emphasis to the contention that pituitary therapy (posterior) may be of decided service in pneumonic conditions:

A young lady, following a long, cold drive through the mountains, was taken with a severe chill, high fever and great malaise. The usual pain in the side was not marked. The temperature was almost 105 deg., the pulse rapid and uncomfortable and the clinical signs pointed to "threatened pneumonia." When seen her temperature had been reduced to 102.5 deg., the pulse was 120 and the blood pressure 90 mm. One mil of pituitrin was injected and the patient was seen an hour and a half later. She wanted to get up and the bright red areas on her cheeks had largely disappeared. The temperature was below 101 deg., the pulse 90 and the blood pressure 110 mm. And she made "an uneventful recovery."

The second case was somewhat similar but the pain in the left lower lobe of the lung was intense. The temperature was 101.5 when seen, with blood pressure 90

mm. and pulse 96. A single dose of solution of hypophysis (Squibb) in an hour changed the circulatory conditions as follows: Pulse 84, blood pressure 115 mm. and temperature 100.5 deg. The pain subsided and the recovery was good, though in this case an element of "grippe" was present which complicated the pulmonary disorder.

Many times the pituitary principle has been given in shock and collapse with most salutary results. Its use as a prophylactic of these conditions is just as rational and the results far better because of the obvious better condition of reactivity likely to be present early in a disease.

It is well to administer two or three additional daily doses of pituitary in cases similar to those outlined, and in well advanced pneumonia with consolidation and the usual symptoms, one half mil. may be given several times a day with clear cut effects on the condition of the patient as well as the clinical findings, especially those connected with the circulation.

Further Results with Thromboplastin.—

The value of an emulsion of brain substance as a local application following tonsillectomy, etc., to prevent hemorrhage has already been mentioned in this department. Hess recently makes a further report of his experiences with this remedy (*Journal A. M. A.*, December 9, 1916) in the Research Department of the New York City Department of Health.

This remedy has proved itself of true value as a hemostatic not merely in the post-operative conditions previously referred to but in controlling hemorrhage wherever it can reach the site of the bleeding. In the maternity hospitals of New York it has

been used successfully in controlling the bleeding in cases of melena neonatorum and in local bleeding from the cord, skin, mouth, vagina, etc. When necessary it may be injected into the site of the bleeding as following tooth extractions; and the dilution of the solution or boiling causes little or no diminution of its potency.

Hess recommends its further trial in intestinal or gastric hemorrhage, for it is innocuous when given by mouth and seemingly effective in controlling bleeding in the stomach and upper intestine.

Its faculty of promoting granulation and the healing of wounds has prompted its extensive use in the local treatment of torpid ulcers and sluggishly healing wounds.



THE ABRAMOVITZ AIR PRESSURE URETHRAL SYRINGE.

One glance will suffice to see why this syringe is so efficient and effective.

Sterilization of the Syringe.—The barrel of the syringe is boiled for about 5 minutes. The water is drained off and the barrel allowed to remain in the warm sterilizing dish which will dry it. When wanted for immediate use the barrel is readily made dry by wiping the inside with sterile cotton on an applicator and the outside by cotton or gauze. The double-bulb need not be sterilized as it does not come in contact with the patient or the drug. The syringe is kept sterile by submerging the lower half of the barrel in alcohol. This can be readily done by either placing it in a covered vessel containing alcohol or by fitting to a large test tube a cork with a hole cut therein to admit the barrel of the syringe. The test tube is half filled with alcohol which will keep the syringe tip sterile. Care must be taken to wipe the syringe dry inside and outside before filling it with the drug in order to avoid any alcohol from mixing with the drug.

Filling the Syringe.—The desired amount of drug is conveniently drawn up the barrel by pressing and releasing the upper bulb. Drugs contained in ampoules or small vials are poured in the bowl of the syringe after removing the bulbs and inserting the tip of the syringe in the meatus. The patient assists by holding the barrel in position.

Technique for Anterior Urethral Injection.—After irrigating the canal, the drug is injected in the anterior urethra by pressing the upper

bulb while holding the penis slightly raised and having the meatus fit well around the tip of the syringe. A sufficient amount of air is injected after the drug to moderately inflate the anterior urethra in order to open the sacculations of the canal and thus allow the drug to reach all the pus pockets. The syringe is withdrawn while the left hand holding the penis compresses the meatus so that no drug or air escapes. The penis is then raised and lowered several times so that the drug may cover the entire mucosa.

Technique for Posterior Urethral Instillation.—Irrigate the patient with a warm boric acid solution. Try at the latter part of the irrigation to teach the patient how to relax the compressor urethra muscle and allow the irrigation fluid to enter the bladder. After the patient completely empties his bladder, he is set on the edge of the operating table or a chair slightly leaning backward. The desired amount of the drug is drawn up in the dry syringe, the penis is held elevated to a 45 degree angle, the drug is injected by pressure on the upper bulb, a few seconds are allowed for the drug to gravitate down in the bulbous urethra.

The patient is then told to make a quick effort to urinate or better, the patient is told to force down his perineum which is easily done by making an effort to strain at stool, while at the same time the pressure is continued on the lower bulb and thus injecting a further supply of air back of the drug which will push the drug up the posterior urethra. The natural curve of the posterior urethra, its spindle shape, and the verumontanum will divert the drug along the posterior urethral walls and orifices while the excess of air will pass over into the bladder. The passage of the air over the drug into the bladder is audible. It produces a low rumbling sound nearly the same as the sound when air is slowly blown in an empty bottle. When this is heard, the physician is sure that the air has passed over the drug and the drug remained in the posterior urethra.

It must be remembered that patients who have never learned how to allow the irrigating fluid to enter the bladder will during the first or second treatment show some obstinacy, but with a



little patience they will quickly learn to allow the drug to pass into the posterior urethra.

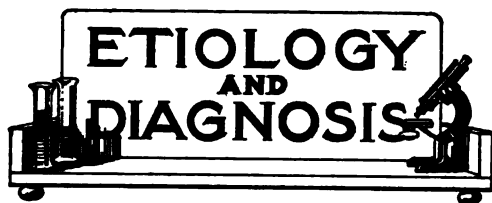
A few points which will aid to teach "green" patients to relax the compressor urethra muscle:

1. Patient's effort to urinate.
2. Patient's effort to strain at stool.
3. Patient's voluntary working the perineal muscles up and down.
4. After injecting the drug and filling the urethra with air to its capacity, hold the meatus and strip or milk the urethra towards the scrotum. This will direct the pressure of the drug and air to the posterior urethra.
5. Warm the drug to body temperature.

After the anterior or posterior urethral injection, a liberal piece of cotton is placed over the gland and held there by a rubber band. The patient is instructed to dress the penis flexed over the symphysis pubis, which will allow the drug to remain in the canal and not be discharged on the cotton.

Advantages:

1. It has no piston and is thus the most aseptic and clean.
2. Every drop of the drug is injected and none wasted.
3. The air inflation makes a very small quantity of drug sufficient to cover the mucosa.
4. Early distention of the canal by air will do away with the need of sounds later.
5. Posterior urethral instillation is made possible without instrumentation.
6. The instillation is quick, painless and certain.
7. One or two demonstrations will enable the patient to carry out treatment at home, proving useful in cases which cannot appear for treatment at the intervals desired.



Value of Blood-Pressure Observations Made During Surgical Procedures.—Moots, in *Interstate Med. Jour.* (Oct., 1916) states that for the past eight years, he has, as a result of his experience alone, come to certain conclusions which he wishes to offer at this time.

1. The systolic pressure alone is of very slight if any value.
2. The diastolic pressure alone is of much more value than the systolic alone.
3. The pressure-ratio is the essential factor, and offers the earliest danger-signal.
5. There are certain elements in technique which have a marked and constant effect upon the pressures. These are as follows:
 - (a) The psychical or emotional state of the patient.
 - (b) The position of the patient upon the

table, the extreme Trendelenburg being the worst.

(c) Overdosing by the anesthetist.

(d) The amount of traumatism inflicted by the actual operation, such as cutting and tearing the tissues with scissors, the hands, and other dull instruments; the packing of large packs instead of rubber tissue into the abdominal cavity.

(e) The preservation of the fluids in the body up to the hour of operation, this being absolutely necessary to maintain the usual pressures.

New Test for Syphilis.—McDonagh has recently published (*Proceedings Royal Society of Medicine*) a brief account of his new test for syphilis, which he terms the Emulsoid-gelatin or Gel Test. The latter is as follows: If glacial acetic acid is added to blood serum, a syphilitic serum is readily identified through the rapidity of precipitation and resulting degree of opacity. Syphilitic sera contain much more protein nitrogen, more absorbed amino-groups, and more absorbed electrolytes. The sulphate of a heavy metal (lanthanum in the test) is dissolved to saturation in the acid in order to cause a greater precipitating action.

Stones in the Urinary Tract.—E. C. Ballenger and O. F. Elder (*New York Med. Jour.*, Feb. 3, 1917) writing on this subject, state that stones may occur in one or both kidneys, in the ureters, bladders, prostate, deep urethra, anterior urethra and fossa navicularis. Stone or stones in the kidneys may or may not be attended with pain and whether there is or is not pain, injury to the kidneys always results. The greater the back pressure (stone in the ureter or pelvis of the kidney) the greater is the damage.

Pus in the urine is a frequent symptom of stone in the kidney.

The diagnosis of stone in the kidney is made through the presence of pain, tenderness on heavy percussion, recurrent hematuria, persistent pyuria and X-ray examinations.

Differential diagnosis should eliminate tumors, inflammatory lesions of the kidneys, Dietl's crises, nephralgia, appendicitis and gallstones.

Renal Tuberculosis.—To diagnose a certain lesion, writes Lyons (*Col. Med.*), one must bear in mind the probability of its existence, and the main reason here for the failure of an early diagnosis of renal tuberculosis is the fact that the general practitioner will not be divorced from the old belief that he is dealing with a cystitis, since all symptoms of renal tuberculosis point to the bladder. In the early stages repeated, careful microscopic examination of the urine will aid materially in the diagnosis. If, after repeated search of a catheterized specimen of the patient's urine the tubercle bacilli can-

not be found, a guinea-pig should be injected to verify or refute the suspected diagnosis. In case the outcome is positive, every practitioner knows that 90 per cent. of urinary tuberculosis begins in the kidney, and he should now advise the patient the exact means for localization of the diseased focus.

Early Diagnosis of Tabes Dorsalis.—Schaller (*Journal A. M. A.*, January 20, 1917) bases his conclusions upon the study of 150 cases of tabes and an investigation of the literature. He finds one of the earliest pathologic changes affecting the nervous system to be a syphilitic leptomeningitis of the cord on its posterior aspect. This lesion bears a direct etiologic relation to the degeneration of the posterior columns. Its characteristic manifestations are found in a multiple symmetrical radiculitis with pain and paresthesias; impairment of superficial and deep sensibility; loss of the Achilles reflex; increased cell count and globulin content of the spinal fluid, and a positive spinal Wassermann reaction. Further very early signs of tabes are to be found in anisocoria, pupils of irregular contour, and in diminished hearing. Cardiovascular disease, especially involving the aorta, and general glandular enlargement are very constant early concomitant signs. Upon the discovery of any small group of these symptoms one should suspect an early tabes or that the patient is, at least, a potential tabetic. All of these evidences may occur before the appearance of any of the signs usually considered necessary for a diagnosis of tabes.

Syphilis of the Stomach.—Eusterman (*Amer. Jour. of the Med. Sciences*, Jan., 1917) in his interesting article states:

1. Syphilis of the stomach, tho rare, is not as infrequent as is generally supposed. The aid of the Wassermann-Noguchi reaction and roentgen rays are necessary to establish the presence and the specificity of the lesion.

2. Denial of the disease, lack of evidence pointing to a primary lesion, or absence of positive Wassermann reaction does not exclude the possibility of gastric syphilis.

3. The diagnosis is based on a history of infection, a consistent positive Wassermann reaction, undisputable evidence of a gross gastric lesion, and—excluding cases showing irreparable extensive disease—a permanent cure by purely antisyphilitic measures. The diagnosis is often accidental. The possibility of syphilis should be considered in every atypical case, or in those not responding to ordinary methods of medical management.

4. The symptomatology which is fairly characteristic of gastric syphilis in view of the cases reported herewith, is suggestive of benign gastric ulcer; the gastric chemistry and roentgen findings rather suggest carcinoma. The average age of patients with acquired syphilis of the stomach is about 35; the duration

of the complaint averages 3 years. In most instances the condition is characterized by an initial intermittent course, followed soon by continuous symptoms and associated with epigastric pain of variable degree, felt shortly after taking food and not relieved by food or alkalies. From the outset there is a tendency toward emesis, a variable degree of flatulency, good appetite, infrequency of hemorrhage and palpable tumor, diffuse abdominal resistance, a progressive course, and marked loss in weight without cachexia.

5. Anacidity or achylia is characteristic of the majority, if not of all, cases of actual gastric syphilis. This can be explained by the influence of the pathological process upon the gastric mucous membrane.

6. Extensive gastric involvement is frequently present at the time when gastric disturbance first becomes manifest.

7. A gummatous ulcer, usually multiple, and especially a diffuse syphilitic infiltration with variable degree of contracture (fibrous hyperplasia), thickening, deformity, and perigastric adhesions chiefly involving the pyloric segment, is the usual pathological condition. Demonstration of the presence of *Spirocheta pallida* in the resected tissue would be final proof of specificity.

8. Results from antisyphilitic treatment are encouraging in all but very advanced cases. Surgical interference is indicated in certain cases. Early diagnosis and intensive treatment invariably result in symptomatic cure and structural improvement.



Postoperative Ileus.—This is a very important subject to the surgeon, says Dr. Frank B. Walker in the *Detroit Med. Jour.* (Feb., 1917). In the first place it must be recognized and should be discovered early. It is symptomatized by pain, persistent vomiting perhaps days after the operation, and obstipation even in the presence of peristalsis. The vomiting becomes peculiar and the amount expelled may be out of proportion to the intake, partaking of the character of an overflow, as Murphy has well expressed it, due to the discharge of glandular secretions. In the early stage there may be little or no change in pulse or temperature.

Having recognized ileus as impending, the first desideratum is a quiescence of the upper digestive tract. That is not secured by persistent oral medication. It is worth while to discontinue all food, drink and medicines by mouth at least temporarily and to practice gastric lavage for persistent vomiting. In the

meantime pituitrin or esserine may be administered hypodermically, although their efficacy is a matter for discussion. Proctoclysis should be used and may be interrupted occasionally by an enema. Such measures may bring about favorable termination.

Creolin in Scabies in the Infant.—Montgomery (*Archives of Pediatrics*) says an excellent remedy, especially good in infantile scabies, is Balsam Peru.

Beta-naphthol, as a salve 10-150, is also a fine anti-scabitic, but, unfortunately, one involving the liability of systemic poisoning.

Creolin is prescribed as a salve:

R	
Creolin	10.00
Sapo viridis	30.00
Adipis benzoat ad.....	100.00
M.	

S.—Rub in once a day.

The green soap adds to the penetrating qualities of the preparation, but it is not a necessary ingredient, and may be undesirable as drying and irritating to the tender skin of the infant.

In making use of creolin, however, it must always be remembered that sulphur is the best remedy for scabies, and that creolin really occupies a secondary, altho a very important place.

Battle-field Wounds.—Mencièrre, of Rheims, (Jan. *Treatment*), says in speaking of battle-field wounds: "The occlusion of wounds with a powerful antiseptic, fatal to spores, without deleterious effect on the cells, stimulating phagocytosis, and promoting healing is an ideal treatment. I have tried formol, salicylic acid, tincture of iodine, and even iodine vapor without success. There is no objection to the use of iodine as a first dressing, but it should not be used repeatedly as, in addition to its germicidal action, it destroys cellular tissue, leaving a bruised open wound which is an excellent culture medium.

The formula I have found most effective is the following:

Iodoform	10 grammes
Guaiacol	10 "
Eucalyptol	10 "
Balsam of Peru	30 "
Ether	100 "

This solution to be used for moistening gauze and for injecting into the sinuses, with a syringe.

Diseases of the Rectum.—Sir Ormsby (*Med. Press*, Feb. 7, 1917) says diseases of the rectum are amongst the most common affections met with in general practice. Owing to the peculiar situation of this region of the lower

bowel, the special organs found in its immediate vicinity, and the important function it performs, its careful study is most necessary to the busy practitioner. Furthermore, it must be borne in mind that pain and uneasiness in the rectum or around the anus is often only a reflex symptom of disease in adjacent parts—such as may affect the bladder, prostate gland, and urethra, in the male, and the ovary, uterus, vagina, bladder, and urethra in the female. Consider for a moment the different circumstances and conditions in which individuals of all classes pass their lives, and the treatment the body receives, whether in the consumption of food and alcohol, the wearing of scanty and defective clothing, habitual constipation, sedentary and unhealthy trades or occupations, and the numberless other conditions under which people of all classes and sexes are compelled to exist to earn a livelihood. Then there are the idle rich, who never work, but pass their lives in looking for excitement and amusement, existing in luxury and indulging but too freely in the pleasures of the table far in excess of the requirements of the body in either food or drink.

Continuing the author says: "Any of the conditions of the classes mentioned may influence the causation of such maladies, whether trivial or serious, as well as causing in a highly-strung temperament more or less local pain or irritation in addition to much nervous depression.

In a long experience in the treatment of these special cases patients have come under my observation, who, when properly treated, have been saved much suffering and considerable secret anxiety. Delay in seeking relief in rectal diseases is attended with much danger, because abnormal growths which are benign at first may degenerate into malignancy after the lapse of time.

Many patients of both sexes are satisfied to drift on without an examination, detailing their symptoms to their medical attendant, who without an ocular or digital examination prescribes various vaunted ointments or lotions, and is much surprised that the patient does not improve. There is no class of cases requiring more careful attention and study than the diseases specially arising in connection with the rectal canal. It is curious to observe how depressed people become when suffering from such affections. A gentleman patient of mine not long ago consulted me—he was most depressed and despondent, in fact, becoming almost demented, imagining he was suffering from some very serious disease, which, on examination, turned out to be a very trivial affection of the rectum, and on receiving proper treatment he was quickly cured. I have experienced this condition of mind in many other cases of the same kind.

Females, owing to their disinclination to undergo what they term an examination, may go on from week to week suffering excessive torture both in mind and body on account of a trivial rectal derangement, which, with a little judicious treatment, could be quickly and permanently cured.

In all cases it is far better to insist on an examination in order to ascertain correctly the

cause of the trouble, as without a thoro examination a serious error of diagnosis might easily be made, and valuable time lost in applying the necessary treatment. Great misconception often exists in the minds of patients with regard to the presence of rectal disease. Many persons who suffer from pain in the lower bowel jump to the conclusion that they have piles, telling their medical adviser so, evading examination on account of inconvenience, excessive nervousness, modesty, or not being prepared to undergo the necessary examination at the time. The family doctor or medical friend, who takes the diagnosis for granted, at once prescribes some simple application, such as gall and opium ointment, which is applied from week to week without any effect.

When patients come to me complaining of continued pain and uneasiness in the lower bowel, with the occasional passage of blood or mucus, I never prescribe without an ocular or digital examination, placing them on a special examination couch, which I have had constructed for my own use. Such an examination can be carried out with the greatest ease without the necessity of undressing (if a female) and causing the patient little or no exposure or inconvenience.

In all examinations the utmost gentleness and delicacy must be practiced, and any rough or undue haste to penetrate thru the sphincters in carrying out the digital manipulation only leads to much after-pain and irritation. In exploring the rectum much information can be gained, firstly by digital examination, and afterwards, if necessary, the rectum can be further explored by the various specula, and if the disease is higher up, beyond the reach of the finger, the use of the proctoscope (long or short) or sigmoidoscope will be found a most useful aid to diagnosis."

Organic Stricture of the Urethra.—Begg (*American Jour. Surg.*, Dec., 1916) after considering the subject of organic stricture of the urethra from the standpoint of pathology, etiology, diagnosis and treatment, reaches the following conclusions:

1. Urethritis is the cause of organic stricture in 90 per cent. of the cases. The careful treatment of this disease from its inception, especially avoiding the use of strong, irritating injections or irrigations tends to lessen stricture formation.

2. The early recognition of inflammatory infiltrations and the treatment of these before fibrosis takes place, prevents the bad forms of organic stricture so common in the past.

3. The flexible *bougie à boule* is the most suitable instrument for detection of the number, location, calibre and character of strictures.

4. Gradual dilatation is a method of choice in the treatment of stricture in the vast proportion of cases.

5. When a stricture is undilatable or when sepsis retention of urine or extravasation, make

operation obligatory no amount of time, labor and patience should be spared to accomplish a passage of the guide prior to operation, thereby preventing the injury produced by long anesthesia on the kidney, which is frequently also damaged.

6. When a filiform cannot be introduced, the use of methylene blue solution is of marked service as an aid in finding the opening in the strictured urethra.

7. Post-operative dilatations are necessary over a long period of time to prevent recontraction.

Tuberculosis of the Hip Joint.—In the *Southwest Jour. of Med. and Surg.* (Feb., 1917) McVicker says that the treatment of tuberculous hip joint disease is rest. Place the patient in bed, and put both limbs in extreme abduction, then apply plaster casts, and from above the knee of the diseased limb extension. This method gives the most ideal position that can be devised. Keep the patient in bed until by frequent X-ray examinations you are sure the tuberculous process has completely healed. Make the bed ambulatory if possible so that the patient may be kept out of doors the greater part of the day; feed him every nourishing food that he can be induced to take and keep up the treatment by rest and immobilization until he is cured, regardless of the time it takes. It may be a year or more. Murphy advises an injection into the joint of about 40 to 60 minims of the following solution: formalin, 1 per cent.; creosote, 2 per cent.; guaiacol, 2 per cent., and 95 per cent. glycerin, with 10 per cent. by weight of iodoform. Repeat every three weeks for three doses.

Treatment of Fracture of the Spine.—Sharpe (*Amer. Jour. of the Med. Sciences*, Dec., 1916) does not believe that the conventional temporizing methods of treatment of fracture of the spine is correct. He holds that early operation in all cases that show a cord lesion is indicated for the following reasons:

1. Relieves pressure from cord whether due to depressed bone or blood clots.

2. If fracture dislocation, allow cord ample room, relieving pressure effects of angulation.

3. Provides drainage of the certain edema, which by its compressive effects is destructive to the nerve fibers.

4. Allows for drainage of hemorrhage, if present, the compressive effects of which may be so great as to permanently damage the cord.

5. In skilled hands, laminectomy is not a difficult or dangerous operation, and by doing it early the surgeon has given the damaged cord the best possible chance for repair.

If the cord is found completely severed at operation, Sharpe believes suture should be attempted, for the reason that he has found that

the patient suffers less from trophic disturbances than if suture is not done. The only contraindication to operation for fracture of the spine is in cases in which evidence of crushing is so apparent that a complete destruction of the bony canal is present.

Intestinal Stasis.—Mosher in his interesting article on Intestinal Stasis, in the *N. Y. Med. Jour.* (October 28, 1916) recommends the following exercises to aid digestion, prevent constipation, and strengthen the abdominal wall:

1. Lie on the back (bladder empty and knees bent). Gently stroke the abdomen downward six times along the inside of the left hip, from ribs to pelvis.

2. Stroke three times across the abdomen on the navel line from the top of the right hip to the top of the left, then downward as in Exercise 1.

3. Draw the lower abdomen forcibly inward by muscle contraction (not by breath), and imitate the movement involuntarily made in taking a long restful yawn—breathe in slowly all the air possible, stretching the trunk and neck forward, then as slowly breathe out all the air taken in. Repeat six or eight times. This exercise can also be taken in the sitting or standing posture and should be repeated often when enteroptosis is present.

4. Forcibly draw in the lower abdominal wall (not by breath but by muscle contraction), then raise it and hold long enough to count ten. Do this three times. Rest and repeat.

If the abdomen is distended by gas, insert a small tube (the rectal point of a syringe) into the rectum before beginning the exercises; if retained, it will let out the gas as fast as it is carried down. Never apply pressure below and to the inside of the right hip (region of the appendix).

These exercises should be taken by every one on retiring, to overcome the sagging of abdominal organs due to the standing and sitting posture. They may be repeated half an hour or more before meals, if indigestion and gas are present.

Treatment of Obesity.—Cornwall in his interesting article in the *Boston Med. and Surg. Jour.* (October 26, 1916) says that measures to improve oxidation in the body are called for in the treatment of obesity; and as all metabolic processes are more or less under control of the internal secretions, such measures are directed very properly toward improving the condition or action of the glands which produce these secretions. This means, as regards diet, regulation of the quality as well as quantity of the food, so as to diminish, in particular, the toxemias of alimentary origin which could injure those glands or disturb their functions. This is effected mainly by restriction or ex-

clusion of articles of food of animal origin excepting milk and its products.

The following practical suggestions for regulating the diet in obesity seem in harmony with the facts and principles above alluded to:

Bear in mind that regulation of the diet is the principal thing in the treatment of obesity, and that this regulation should be qualitative as well as quantitative.

Insist on scales and measures being used to secure accuracy in carrying out the dietetic prescriptions.

Do not rely for protein chiefly on animal tissues and eggs, as is done in most obesity diets, but secure protein chiefly from milk and its products, which supply all the different amino acids needed by the body and are relatively easy of metabolism, being free from purins and comparatively insusceptible to putrefactive processes in the alimentary canal. If no other morbid condition is obviously present, a small amount of animal tissues or eggs may be included in the diet; but in cases complicated by obvious insufficiency or nitrogenous metabolism (as shown by gout, gravel, migraine, arteriosclerosis, chronic nephritis, or hepatic insufficiency), or by disease of the alimentary canal, which increases the habitual production in that canal of putrefactive poisons and their absorption therefrom, the amount of flesh and eggs should be very small indeed or they should be excluded altogether. Such qualitative regulation of the protein ration for the special purpose of easing the burden of nitrogenous metabolism, is a cardinal principle in this method of treating obesity and its distinguishing feature.

Include plenty of fresh fruit and vegetables in the diet, in order to supply full rations of the body salts and vitamins; but use careful selection, so as to include only fruits and vegetables which are comparatively free from objectionable qualities, such as indigestibility, possession of purin or oxalic acid content, and offensiveness to the patient's idiosyncrasies.

Allow water to be drunk in ordinary quantities.

Begin the treatment by restricting the fuel ration so as to supply 1,000 calories less than the minimum health ration for the particular patient.

Do not reduce the quantity of protein much below the minimum health ration, but let the loss fall chiefly on the fat and carbohydrate.

Do not, as a rule, try to reduce the weight by more than two pounds a week, on the average. Such a moderate reduction is not often attended with any unpleasant consequences.

Bear in mind the exceptions which exist in regard to reducing weight: Be cautious in reducing the weight of those afflicted with serious diseases; relax the rigidity of the diet or discontinue all attempts at reduction, if in the course of treatment symptoms of distress or weakness appear (which does not often happen with this plan of treatment); and do not, as a rule, attempt to reduce the weight of those en-

tering on old age who have been obese for a considerable time.

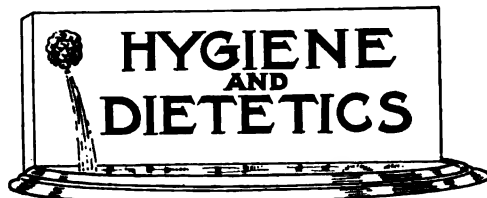
In most cases allow occasional periods of rest from the rigid diet, and while giving the minimum health rations, take note if the weight increases in consequence.

The Importance of Correcting Foot Troubles.

—A famous general once pointed out that an army is no stronger than its feet. Military surgeons and the surgeons of large bodies of men who are much on their feet, such as policemen and motormen, are keenly alive to the truth of this epigram, but it is very much to be feared, says an editorial writer in the *Long Island Med. Jour.*, (Dec., 1916) that the average physician has failed to grasp the importance of familiarizing himself in a practical way with the problems arising from bad feet.

It has been the custom to regard foot troubles as comprising flat feet, bunions and metatarsalgia and either sending the sufferer to an orthopedic surgeon, or dismissing the case with the advice to procure a pair of plates. Apparently little or no attention is paid to corns, calluses and ingrowing nails, except by the general surgeon who deals with an occasional aggravated case. As a result the chiropodists, who once upon a time were occasional only and classed with manicurists, have begun to appear in increasing numbers and are no longer satisfied to deal with pedal cosmetics, but have established a school and are being trained in the correction of foot deformities. They are giving advice as to proper footwear and not infrequently undertake minor operative work as well.

The importance of recognizing this situation in its bearing on the future must not be underestimated. Physicians have trained the public to feel that the care of corns and calluses, etc., is no part of their work and except as an occasional orthopedist may be found protesting against the unscientific use of indiscriminately applied foot plates and so-called orthopedic shoes, the profession in general is silent on the subject. It is altogether too common to find early cases of arthritis deformans, of osteosarcoma, of tenosynovitis, diagnosed as rheumatism and dismissed with a prescription for salicylate of soda. If physicians are content to permit these cases to drift into the hands of a chiropodist, they are permitting a grave injustice to their patients, for it is self-evident that thoro diagnostic training cannot be expected of them, and they will permit these conditions to pass unnoticed causing to the patients lasting harm, just as glaucoma and iritis are being daily treated by lenses by optometrists. It is time for the medical schools to awaken to the need of laying more emphasis upon these lowly but important ailments and impressing upon their students the need for more thoro acquaintance with the practical management of foot troubles.



Dextrose and Diabetes.—Dr. Samuel T. Meltzer and Dr. L. B. Kleiner, investigators in the Rockefeller Institute, believe that in dextrose they have found the cause of diabetes, according to a writer in the *Southern Medical Journal*. Should their conclusions be sustained by experience their discovery would indeed be a boon to humanity. Government reports available indicate that about nine thousand persons in this country annually succumb to the disease, and as it is very slow in its course and often unrecognized for years, we are justified in believing there are more than twice that many cases in existence. In the cases of youths and young adults, the disease is apt to run a rapid course to a fatal end, but instances are not rare where in aged people sustain the drain for years unconsciously, and finally succumb to some intercurrent affection.

Dextrose is one of the natural products of our metabolism. When an excess is produced it is eliminated thru the kidneys and, if the process continues, we have diabetes. Dextrose is also, to a certain extent and from natural sources, a wholesome article of diet, being the sugar found in fruits, while glucose, which is almost identical, is the sugar found in grapes, honey, etc. These are natural foods and wholesome for healthy people. But a way has been found to manufacture them cheaply on a commercial scale by the reaction of a mineral acid upon the starches of grains. Enormous quantities of this artificial sweet are used for the manufacture of the cheaper grades of candies and the fancy syrups seen on our breakfast tables. Many of these syrups are elegant in appearance and palatable to the taste, but there is a sticky, glutinous texture to most of them that betrays their chemical origin. It is to these artificial products that the medical profession will attribute the production of diabetes, if the theory prevails.

They should not, however, allow it to prejudice the minds of the people against the sweetness of sweet fruits, nor against that most royal of all sweets, pure honey gathered by the bees from the fragrant flowers.

School Children's Teeth.—A recent investigation made by the United States Public Health service in connection with studies of rural school children showed, says an editorial writer in *Public Health* (Nov., 1916) that 49.3 per cent had defective teeth, 21.1 per cent had two or more missing teeth, and only 16.9 per cent had had dental attention. Over 14 per cent never

used a tooth brush, 58.2 per cent used one occasionally and only 27.4 per cent used one daily. Defective teeth reduce physical efficiency. Dirty, suppurating, snaggle-toothed mouths are responsible for many cases of heart disease, rheumatism, and other chronic affections. The children are not responsible for the neglected state of their teeth. The ignorant and careless parent is to blame for this condition—a condition which hampers mental and physical growth and puts a permanent handicap on our future citizens. School teachers can and are doing much in inculcating habits of personal cleanliness on the rural school child but this will fail of the highest accomplishment unless parents cooperate heartily and continuously. This is a duty which we owe our children.

Sodium Bromide in Dyspepsia.—Leven, (*Jour. de Méd. et de Chir. prat.*, Sept. 10, 1916) attributes dyspepsia to an irritation of the solar plexus, and, consequently, in its treatment makes considerable use of bromide of soda, the most powerful and least toxic sedative of the nervous system. He always prescribes it when the painful sensations, secretory or motor, are not sufficiently checked by dieting. It is particularly successful in these four syndromes: 1. Painful crises; 2. Gastric hypersecretion; 3. Spasm of the cardia or of the pylorus; and 4. The respiratory, cardiac, circulatory, nervous and intestinal symptoms due to ærophagia, with which spasm is so often associated.

The drug is always well borne, provided that it is chemically pure. A dose of 2 grammes a day is sufficient, half being taken in the morning and the rest at night. Leven always prescribes an allowance of 3000 grammes of fluid for each meal, of which half is taken half-an-hour before the meal, and the other half during the meal itself. When any lesion is present, or symptoms of spasm form the chief trouble, the bromide in simple solution is given with the second part of the allowance. It should be kept in contact with the gastric mucous membrane as long as possible. This result is obtained as proved by radioscopy, when the bromide is taken in the course of the meal; when taken on an empty stomach, it passes thru very quickly indeed.

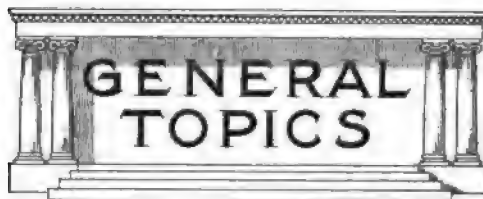
Well makes use of a more complicated mixture, suggested by Robin, in hypersthenic dyspepsia, and even in the case of intestinal obstruction with severe colic. A tablespoonful is given, in a little water, at the beginning of each meal.

R. Potassii Bromidi 3iiss.
Sodii Bromidi 3iss.
Ammonii Bromidi 3i.
Liquoris Arsenicalis 3ss.
Tincturæ Hyoscyami 3iss.
Syrupus Aurantii 3ij.
Aquam Destillatam ad. 3x.
Misce. Fiat mistura.

The arsenic appears to increase the sedative effect. It is particularly in very severe spas-

modic attacks, which simulate obstruction, a stricture, or a growth, that bromide has a remarkably quick effect. Radioscopy leaves these functional or objective symptoms a matter of doubt, but the bromide treatment cuts them short in eight or ten days, and may obviate surgical measures.

In children, in whom the reactions, set up by gastric reflex, are frequent and severe, Triboulet considers the bromide treatment to be called for very often and to be thoroly sound, provided a pure salt is used.



Climate in Bright's Disease and Nephritis.—Hinsdale in *Urologic and Cutaneous Review* (Feb., 1917) says that Bright's disease and nephritis are diseases clearly amenable to climatic treatment. Apparently the first requisite is that the air and soil shall be warm, sunny, reasonably dry, and free from malaria and disagreeable atmospheric changes. It is a disease attended by extensive degenerative changes in the renal and circulatory organs, and hence it is highly necessary to insure an abundant and undisturbed action of the skin. The locality should be conducive to an out-of-door life the year round. This is the well-known advantage of the climate of southern California, where the little rain that falls never does anyone any harm.

Our best course is to advise a warm climate first—one having moderate elevation and only a moderate rainfall, with small diurnal variations in temperature, the humidity being, perhaps, secondary in importance to temperature and wind.

The fact that other localities in the extreme northwest, such as the States of Washington and Montana, as well as Colorado, Minnesota, Wisconsin, Michigan, and Utah, have such diverse climates, and nevertheless, fall on the favored group, should not determine their choice as health resorts for renal cases, but would indicate some advantage in the character of the population and that the sum total of the elements of climate in those localities is conducive to a hardy race.

To Remove Drug Stains from Skin and Linen.—Mankiewicz in *Medizinische Klinik*, Berlin, mentions, for iodine, moistening with ammonium or sodium thiosulphate. For silver nitrate, washing with a 10 per cent. solution of potassium cyanid or 10 per cent. potassium iodid. The yellow silver iodid spots are removed with

sulphurous acid. He says that 10 parts each of mercuric chlorid and ammonium chlorid in 80 parts water will clear the skin of silver nitrate spots. For chrysarobin, rub with benzol (benzene). For resorcin, weak citric acid. For picric acid, leave the spot in contact with potassium sulphate for one minute then wash with abundance of soap and water. Or apply a paste of magnesium carbonate in water to the spot and after a time rub it off. Old pyrogallol spots cannot be removed. More recent spots can be treated by warming in contact with a 10 per cent. solution of iron sulphate until it turns a bluish black; then apply water freely and afterward a solution of an oxalate, rinsing abundantly. The procedure has to be repeated. For coal tar colors, spirit of soap.

Strychnine as a Tonic.—Milroy is reported in a recent issue of the *Medical Record* as saying that one of the most gratifying therapeutic results he personally had ever witnessed had been in the use of strychnine in pneumonia. There was no more reliable sign of approaching trouble in this disease than the appearance of edema in the dependent portion of the sound lung. He had observed this edema disappear promptly after the injection of 1-40 grain strychnine and, recurring after a few hours, again vanish with the injection of the drug. He had observed this happen repeatedly in the same case and believed he had seen patients by this means carried over a crisis to recovery. The mode of action of strychnine he must mention as concisely as possible. It acted primarily upon the nervous system, including the sympathetic system, probably most strongly upon the medulla and spinal cord. Without discussing the precise mode of action, whatever this might be, it resulted in a stimulation of the physiological activity of practically the whole body. Admitting that cardiac muscular power and blood pressure were not influenced by strychnine, the fact nevertheless remained that the heart action was influenced favorably in certain conditions. For instance, he knew a doctor with a crippled heart which became irregular and intermittent, with distressing subjective symptoms, whenever he overtaxed it a little. Invariably a few doses of strychnine, in this condition, restored the action to normal with disappearance of the unpleasant symptoms. Now, cellular nutrition was not a process of passive absorption. It was an active, vital process which was under the direct control of the nervous system. Therefore, the profound stimulation of the nervous system by full doses of strychnine, directly promoted a new and vigorous cell activity of the whole body, thus tending to restore the opsonic index. The nervous disorders to which he had referred as capable of being successfully treated by strychnine, represented conditions of depression. The nervous system still retained the ability to respond to powerful stimulation which the big doses of strychnine supplied. In reference to administration he would add that tho the drug might not be wholly eliminated from the body

for as long as eight days, it was mostly gone at the end of twelve hours and therefore the doses must not be too infrequent. Also it was worth while to mention that there was no tendency to habit formation and the largest doses might be abruptly broken off with impunity. Further he would state that this method of treatment was not dangerous. A perfectly safe margin existed between the first appearance of muscular spasm and a really poisonous dose. He had by no means attempted to enumerate the many conditions in which ascending doses of strychnine were indicated. He was convinced that it should be given in much larger doses than was customary and this he was hoping to encourage.

The Height of Specialism.—There is an alleged joke which we have seen in various vestments in divers of the lay periodicals, says an editorial writer in the *Medical Record* (Dec. 16, 1916). A patient with an injured middle finger is shown into Dr. X's office. The latter, after a casual glance at the injured digit, says, "I shall have to refer to you to Dr. Y, in the next block, who specializes in such cases. My specialty is wounds of the ring finger." We must confess that this burlesque of the present-day tendency of the profession is sufficiently near the truth to register a hit. Many of our conservative members are of the opinion that we will eventually carry our refinements to such an extent that each doctor will become something resembling a skilled mechanic, proficient enough in the details pertaining to that little section of the human economy which he has claimed for his own, but lacking the broader outlook, the comprehensive grasp of the organism as a whole, its material and spiritual needs, which the physician of the old school had. Too bad that Oliver Wendell Holmes is not living to express himself in this matter. The appearance of a large volume dealing with the umbilicus and urachus has given us pause. We remember the awe with which our textbook on anatomy was regarded in our freshman year at college and it was of approximately the same proportions as the present tome. If we are to be governed by the relative importance of the subjects in question, we shall await a publication dealing with diseases of the stomach about the size of the *Encyclopedia Britannica* and if some enterprising writer should attempt a work on the nervous system he could fill about a dozen sections of bookcases. Seriously, the monumental work of Dr. Cullen on the umbilicus is excellent and since the stars ordained that it be written it is fortunate that it was undertaken by so able a scholar and surgeon. The subject has been so thoroly handled as to discourage any one else from treading the same path for many years to come. Surgeons having to deal with hernias of this region or with the annoying infections which prove so difficult to handle will be grateful to the author for his painstaking researches which have been carried on for twelve years, and for the admirable illustrations with which he has illuminated his subject.

American Medicine

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Medical Mobilization.—Mobilization is the key word of the hour. A gathering together of cohorts for national defense is not limited to filling up divisions of the army nor to completing the complement of the navy. The ability of the military and naval forces of the United States to carry out their duties and their functions satisfactorily depends upon the mobilization of the civil and industrial resources of the nation. The forces normally at work in times of peace are not motivated by an appeal to patriotism. The true basis of their organization is commercial. At a time of military necessity every group of the community is stirred and energized by sweeps of emotional fervor which urge them on to attempt even the impossible.

Citizenship is a privilege. Patriotism is a responsibility for service. Military life is a calling. Today every group constituting the multitudes of this country, must feel the impulse to live up to the responsibilities of patriotic citizenship with a view to assisting the citizen soldiery whose lives and efforts are now consecrated to the support and vindication of American institutions and theories of justice and honor. Those with pacific tendencies were justified in expressing their inmost convictions in favor of peace as long as the possibility of averting war remained. Their emphasis on the inhumanities of warfare and conscientious opposition to the hideousness of

war may properly justify them in seeking to bring about an early cessation of hostilities. At the same time in the face of national crisis and calamity all citizens in a democracy must rally to the support of their government and demonstrate thru effort and service their loyal allegiance to the country under whose laws they have flourished. No section of the country is in active conflict, but the nation nevertheless has entered and become an actual participant in the greatest war in all history.

Events of the past few weeks have thoroly demonstrated that signing pledges of loyalty is inadequate to conserve the nation. Millions of persons have signified their intentions and pledged their support to the President in this hour of crisis. Flags have been displayed and worn as an index of enthusiastic loyalty. When, however, an appeal was made for volunteers for the army and navy in order to secure about 25,000 men, there was no rush to live up to the signatures or the emblems. The vaunted support, the boasted fealty apparently faded into empty writing and words when the opportunity presented to attest the good faith of the signers in response to a call for volunteers. This is a most significant occurrence and surely indicates that military mobilization cannot depend entirely upon a volunteer system.

The Nation is calling for thousands of doctors for the Medical Reserve Corps. Physicians are needed in every branch of the service but thus far there has been no mobilization of the medical profession worthy of commendatory consideration. It is useless to comment upon the dilatory tactics which have been employed or to berate those responsible for the failure to perfect the organization of the medical work. Mobilization should not be dependent upon volunteering alone, but should be based upon a careful consideration of the duties which might be performed by each and every physician. The national medical defense should not rest upon a small proportion of the profession that volunteers but should involve the participation of every physician and surgeon of the United States. This does not mean a conscription of physicians for essentially military purposes. It involves the organization and systematization of the medical work for the martial army, the industrial army, and the civil population so that the needs of each may be adequately met, promptly, without loss of time, duplication of effort, or burdensome economic losses to the community.

Every physician should live up to the responsibility of his humane calling. Some will desire to serve with regiments, others prefer service at base hospitals, still others will be most useful in recruiting duties. Many will be required to care for the sanitary and prophylactic supervision of munition plants, factories and manufactories of various types and descriptions. Another group may best serve the nation by continuing the work of the hospitals and dispensaries now existent, and to supply remedial care for the general civil population. A large number will be necessary to attend to the wants of those normally

availing themselves of medical service in homes, sanitarian and civic institutions.

A plan of mobilization, distributing military medical service thruout the profession, would serve to protect the nation from physical deterioration incident to the strains and stresses resulting from conditions consequent to war life. Conserving the industrial, agricultural and professional population is a practical military service. Physical disabilities impair the usefulness of a large proportion of the population for actual field service. This fact, however, need not completely destroy their serviceability to the government. They should be employed in whatever capacity their training, intelligence, powers and physical state indicate as their field of greatest usefulness. There should be a wide distribution of the load in the interests of the public health.

Under the auspices of numerous organizations, efforts are being made to classify the professions of the community according to their experience, and the types of work they are prepared and willing to perform in time of war.

The Medical Section of the Council of National Defense deserves the support of every licensed physician. Undoubtedly the usual loyalty and faithfulness of physicians to their ideals will result in a prompt response to questionnaires inviting self analysis with an expression of willingness to serve the nation along specific lines. Every county society in the country should at once gather the necessary statistical data from its membership for transmission to the Chief of the Medical Section of the Council of National Defense in order that he may mobilize, as need arises, any part of the profession, any group of specialists, any group of sanitarians, any group of laboratory

workers, or physicians trained in public health work. Let the profession lead the way in a truly national scheme for mobilization. The time has arrived to indicate the quality of citizenship and patriotism which in the last analysis must be reflected in terms of willing service.

Courts and Public Health.—Social justice should be evidenced in court decisions. With the development of new ideas and ideals in the body politic there should be a reflection of public sentiment in the interpretation of laws which were established previous to the birth of the new point of view. It is proper that courts basing their decisions and opinions upon established law should be conservative in breaking with the past. To alter statutes, as rapidly as the communal opinion is changed, would soon breed chaos and disorder. There is, however, a distinct tendency for our judicial authorities to take cognizance of the needs of society and to interpret liberally the powers and duties of health departments, legislatures and philanthropic social organizations seeking to improve the public health. In *Public Health Reports*, March 30, 1917, is a digest of judicial opinions published during the calendar year 1916. As illustrative of the advance made thru law, a few items merit more than passing notice.

The United States Supreme Court decided that Congress has power "to keep the channels of interstate commerce free from the carriage of injurious or fraudulently branded articles and to choose appropriate means to that end," and to forbid the shipment in interstate commerce of drugs which are accompanied by false and

fraudulent statements regarding their curative effects.

Numerous errors in judgment are bound to result in the mad rush to enact health measures and there is much justice in the decisions:—"To be valid as a health measure a statute or ordinance must provide real protection to the public health"; "ordinances should be reasonable and not unnecessarily burdensome."

A serious question arises from the decision that the contracting of typhoid fever by employees from drinking impure water furnished by the employers is an accident. On the same theory a city supplying an impure and polluted water occasioning the development of typhoid fever among its citizens might be held responsible and damages recovered.

The New Jersey Court of Chancery issued a decision that a marriage cannot be annulled because of fraudulent concealment by one party of his or her physical condition "unless the disease is of such a nature as to render contact seriously dangerous to the other party." Application of this brings up a wide field of inquiry and affords opportunities for many suits for annulment.

In the field of workmen's compensation there are many contradictions. Occupational diseases have not been included in most of the workmen's compensation laws, wherefore the interpretation as to what constitutes an accident or personal injury and what is to be regarded as a disease have been made the basis of various decisions. On the one hand, pneumonia has been held to be a personal injury while lead-poisoning has been regarded as a disease. Tuberculosis and ivy-poisoning also have been deemed to be accidental injuries arising out of and in the course of employ-

ment. These varying interpretations naturally depend upon differences in the wording of the various State Laws. It is unfortunate that greater uniformity has not been secured so as to enable the construction by the Supreme Court of one state to serve as the law in another state.

A far reaching decision occurred in the case of a Pennsylvania meat packer who sold pork containing trichinae, the eating of which caused disease. The packer was held liable to the consumer for injury altho the pork was purchased from an intermediate dealer. In New York State a woman infected by eating trichinized pork recovered damages from the dealer who sold the food altho the infected pork bore a United States Government stamp.

These few cases serve to indicate the tendency of the courts to place a liberal interpretation upon the laws in perplexing suits, the adjudication of which may advance or retard public health enactments. The confusion resulting from inconsistent decisions is perfectly natural during this period of formulation of public opinion and the adoption of ordinances and State Laws without a thoro consideration of their full meaning and relation to the general public. There is a notable improvement in public health legislation and unfavorable decisions at the present time will help to prevent similar errors in legislation in more backward communities. Public health measures must be essentially just and merely to regard them as phases of the police power of the state is an unfortunate reason for their establishment. They must appeal to reason and be reasonable with reference to their general application. Wide powers are necessary but broad inter-

pretations of public health measures are requisite.

In grappling with these new judicial problems the courts are being put to a severe test which will evidence not so much the personal opinion of the justices as the elasticity or fluidity of law as applied to the conditions to be met in the interest of the public health.

Safeguarding the Eight Hour Law.—

In the rush to make preparations for the adequate defense of the United States, hasty steps probably will be taken in order to increase the output of factories of every type. There are numerous evidences that discretion is to be thrown to the winds and, in the demand for supplies, sight will be lost of the needs of the workers. It is timely that a word of caution should be uttered lest the numerous regulations for the protection of employees from over-work and its consequent fatigue should be nullified.

The exhaustion of workers thro long hours of strain and stress is recognized as a powerful cause in the development of many organic diseases. Over-fatigue under all circumstances decreases resistance to infection. Industrial over-work may, for a very short period of time, increase the industrial output, but this is secured at the sacrifice of the strength, effectiveness, and potential capability of the workers.

At the present time the Eight Hour Law recognizes the most healthful period of time to be devoted to consecutive labor without lowering the vitality of the worker. It is worth while, in the midst of an effort to build up the national defense, to take cognizance of the experience of nations now at war in the matter of industrial effort.

A supplemental brief, presented by Felix Frankfurter, and Josephine Goldmark to the Supreme Court of the United States, in the case of Bunting versus the State of Oregon, summarizes some interesting reports of investigating and studying the health of munition worker. The general trend of the reports serves to demonstrate that the introduction of over-time has generally resulted in a decline in the general fitness of workers. This fact is further emphasized by an increase in the sickness rate of workers on over-time as compared with those having the normal hours of labor. Sir George Newman, Chairman of the Health of Munition Workers Committee reports:—"Misguided efforts to stimulate workers to feverish activity in the supposed interests of the country are likely to be as damaging to the desired result as the cheers of partisans would be if they encouraged a long-distance runner to futile sprint early in his race."

"Even during the urgent claims of a war the problem must always be to obtain the maximum output from the individual worker which is compatible with the maintenance of his health. In war time the workmen will be willing, as they are showing in so many directions, to forego comfort and to work nearer the margin of accumulating fatigue than in time of peace, but the country cannot afford the extravagance of paying for work done during incapacity from fatigue just because so many hours are spent upon it, or further extravagance of urging armies of workmen towards relative incapacity by neglect of physiological law."

The committee records its impression that munition workers have been permitted to reach a state of reduced efficiency and lowered health which might have been

avoided without any reduction in the output thru continuous attention to the details of daily and weekly rests.

Modern industry must be guided by physiological law. Physical efforts and energy have their normal limitations. While for short periods of time the vital energies of individuals may be drawn upon without great damage resulting, the continued utilization of physical powers for undue hours each day is bound to result in decreased resistance, lowered efficiency, increased alcoholism, and reduced output.

Over-time is frequently justified on the ground that it is the only way to increase the output of a plant owing to the lack of workers. Unfortunately the greatest scarcity of labor exists among those most highly skilled, and consequently the type of worker most difficult to obtain is most quickly and easily reduced in strength and economic power.

Intelligent experience plainly demonstrates that over-time is unjustified on patriotic grounds, if some patriot seeks thus to promote industrial efficiency and to conserve the army of workers.

In the words of Dr. Kent: "Over-time is more harmful to the worker than labor performed thru ordinary hours. It is therefore, physiologically extravagant."

The English committee as a result of its investigating went so far as to recommend that Sunday labor be abandoned, in order to safeguard the health of the employees. The employers themselves had already recognized the disastrous effects of Sunday work or of a seven day week and welcomed the order to provide for one day's rest in seven. The results of this change were, as had been expected, without any decrease

in the total weekly output of the munition plant.

In England during July it was decided to allow women and young persons over sixteen years of age employed in weaving to work over-time up to a maximum limit of two hours on four nights a week or an equivalent. Within three months the order was cancelled as over-time was found to be working disadvantageously to the welfare of the women.

While the question of output is foremost in the minds of many persons, English experience indicates that the output of a worker on an eight hour day is greater than the results achieved by a worker in the same process or industry on ten or twelve hours per day.

With the industrial aspects of the long day, physicians are not deeply concerned except in so far as they are patriotic citizens interested in promoting the industrial efficiency of the nation. The profession however, should be deeply interested in maintaining the health of the civil army which after all must be depended upon to supply the materials with which the military and naval forces are to pursue their duties. The absence from labor, due to illness, diminishes the output of the individual worker but, what is more important, serves gradually to reduce the health of the worker and in time diminishes the supply of vigorous employees.

Sir George Newman has called attention to the increase of sickness and injuries among munition workers due to a large increase of new hands, the introduction of over-time with its attendant fatigue, and the institution of night work. In many large factories, the sickness rate has risen as high as seven or eight per cent., whereas

in the middle of 1914 the percentage of sickness was under three per cent.

Sir James Paget has written:—"That fatigue has a larger share of the promotion or permission of disease than any other single casual condition you can name."

In view of our present knowledge regarding fatigue in industry and its relation to the health of workers, the medical profession should seek to prevent hysterical impulses from over-riding calm judgment and rational thinking about labor laws. Already legislation has been proposed to amend the labor law in the State of New York so as to remove from the provisions of the fifty-four hour week, persons sixteen years of age or upward employed and "engaged in the manufacture of supplies of any sort for the military and naval forces of the United States or of any state." This amendment is reactionary, dangerous, unhygienic and is pernicious if calculated to promote the national defense. The national defense consists of men and women as well as the supplies dependent upon their energies.

Tuberculosis Carriers.—In the control of a communicable disease, particular attention must be focused upon the carriers. When an acute condition such as typhoid fever or diphtheria develops, it is not difficult to determine whether the convalescent or cured patient continues to be a menace to the community. There are numerous obstacles, however, tending to limit the determination of the entire number of typhoid carriers or diphtheria carriers in the community. Most of these defects are not insurmountable.

In the management of tuberculosis as a civic problem the control of the carrier

creates many grave questions which test the ingenuity of health authorities. If the campaign of health education had been successful, the adequate funds would be available to provide the necessary facilities for hospital or sanitarium care of the incipient cases of tuberculosis. Wide opportunities for diagnosis would have been established and citizens would have recognized the importance of early and prompt diagnosis and treatment as an essential to rapid restoration to health. Thus far, while progress may be reported, the tuberculosis problem is far from solved. There are countless sufferers from open tuberculosis who are at large in the community, free to come and go, and serving as foci for the dissemination of tuberculosis to their co-workers, companions and relatives.

Among the various types of tuberculosis carriers none is more elusive or less amenable to control than those popularly grouped and termed the "Lodging House Cases." A large percentage of the patients reaching tuberculosis hospitals comes from the careless types of city wanderers, whose abodes are far from fixed, and whose variable employment lessens their continued industrial supervision. This group of disease bearers, living in furnished rooms, lodging houses, cheap hotels, practically homeless, in the sense of possessing a fixed habitation, supplies fully one-quarter of all the patients admitted to the tuberculosis hospitals. In addition to those whose actual sufferings finally compel them to resort to medical aid, there is a considerable number in the incipient stages, and indeed in the secondary stages, wasting their own lives and imperilling the health of others in the community.

The Committee on the Prevention of Tuberculosis of New York City has recog-

nized the importance of taking steps to limit the activity of the homeless tuberculous individuals whose sputum marks them as a constant source of danger. In conjunction with the New York City Health Department they have arrived at the conclusion that detention and compulsory segregation are essential for effective communal protection.

The drastic control of public menaces finds favor in the minds of those interested in the elimination of tuberculosis. There are, however, obvious practical objections to the compulsory detention of any particular group of disease carriers that abound in large numbers. It is financially impossible for a large city to provide a sufficient number of beds to care for tuberculosis carriers. Hospitalization is most costly.

As a departmental policy there is much to be urged in favor of the compulsory detention of vagrant consumptives. In fact this measure ought to be serviceable in securing the protection of families from tuberculous members when home conditions are so insanitary as to create a strong liability of the extension of the disease to other members of the household.

Inasmuch as the care of tuberculosis in the secondary stages is more difficult and more time consuming, the cost to the community would be far greater than that required for the extension of plans for the compulsory examination of lodgers, together with their education as to the necessary hygienic measures to be practiced by them. The non-vagrant tuberculous individual, ignorant, indifferent, or careless in his habits is equally dangerous to the community. On the basis of the proportion of individuals living at home or in fixed habitations, the control and the segregation of

the vagrant tuberculosis carriers would not solve the carrier problem in its most vital phases.

Naturally in any plan of compulsory detention, arrangements must be made for suitable occupation in order that the economic loss arising from such detention may be lessened and that the victim may in part make payment to the state for the medical services given him.

As medical inspection is extended to cover industrial establishments and schools the likelihood of undiscovered tuberculosis should decrease. Under the existing circumstances the number of tuberculosis carriers is large but the total number should diminish in proportion to the thoroughness of diagnostic endeavors on the part of communities. The greatest hazard lies in the failure to discover tuberculosis and this is a more practical phase of civic effort and requires a smaller outlay of public funds than any form of treatment.

The tuberculosis carrier in the home must be sought and discovered; his household must be thoroly examined; his children must be given an opportunity to build up an anti-tuberculosis resistance; the victim and his family must be educated in right living; by no means lastly the sufferer must be placed under proper rational treatment as circumstances demand.

The great danger from tuberculosis carriers is to be found in homes. The vagrant more willingly goes to the hospital because he has no home in which to live, infect others, suffer, and die. His contacts are fewer, less intimate, less constant, and for shorter periods of time. He is probably less hazardous in the community than the tuberculous wage earner trying to die at home, comforted by his family whose vitality he is sapping unintentionally, and, possibly, infecting with tuberculosis.

Life Tables.—Statistics are generally regarded as dry-as-dust items without practical value except to a small group of technically trained statisticians. Despite the fear of ponderous figures, propagandists for social reform are impelled to use a large variety of figures purporting to have statistical value while lacking the accuracy demanded by those well informed in statistical methods. With a large variety of social reforms under consideration it is necessary that great care be exercised in quoting figures to demonstrate the needs, virtues, difficulties, advantages or disadvantages of measures advanced and advised.

Life tables are particularly valuable in connection with the discussion of pension systems, vital statistics, public health improvement, together with such practical problems as retirement funds, annuities, and the like. In this country life tables have been utilized that have been devised by insurance companies based upon selected risks and consequently do not reflect the true figures for the general unselected population.

The United States Bureau of Census has published the first governmental life tables comparable with those issued in England, France and Germany. All the tables are based on the estimated population as of July 1st, 1910, and the corresponding deaths in the calendar years 1909, 1910, 1911. This contribution should be a matter of pride to Americans and serve as the basis of statistical studies by physicians, sociologists, public health officers and all others interested in the improvement of our national health. A compilation of this character contains a wealth of information unobtainable from other sources.

References to the tables shows that the expectation of life of a white female at

birth is 57.35 years in rural parts of the registration states while in cities it is only 51.39 years. The white male has an expectation of life at birth, if in the city, of 47.32 years, while if living in rural sections, his expectation of life at birth is 55.06. These four items are merely statistical facts, but the reasons for these expectation differentiations between sex and the sections of the country form a splendid field for theory, conjecture, and investigation. The rate of mortality is greater for males than females thruout the entire range of life.

The minimum annual rate of mortality for white males occurs during the age period 11 to 12 and is at the rate of 2.28 per thousand. The period is the same for females tho the rate is reduced to 1.98.

The favored three score years and ten is to be reached by 31,527 persons of each 100,000 males born alive and 37,482 females out of the same number born alive. The longevity of females is more pronounced in comparison with the male at the ages of 80 and 90 when there are respectively 15,929 and 2,291 females surviving as compared with 12,160 and 1,523 males.

The importance of mortality figures and expectation of life has been insufficiently recognized and appreciated. This opportunity to commend the issuance of the United States Life Tables is seized upon to call attention to the advantages of familiarity with authoritative figures upon these subjects. They may be utilized constantly in connection with scientific, medical and sociologic studies of health problems. Lessons in statistical methods are generally needed if official facts are to be reduced to mathematically exact tabulations. The old adage, figures cannot lie, must always be

borne in mind. The full responsibility rests upon the mind that figures.

Skin Reactions.—The interpretation of skin reactions has not been regarded as particularly difficult. Only recently there has been recognition of the fact that the administration of certain drugs by mouth may influence in degree and severity the skin reactions due to cutaneous or intracutaneous tests. Kilmer, Immerman, Matsunami and Montgomery in *The Journal of Laboratory and Clinical Medicine*, March, 1917, report the result of their studies to determine the influence of iodides, bromides chlorides and other drugs upon various skin tests; and their results indicate that the influence of drugs should be carefully ruled out, before conducting skin reactions or interpreting them. They have found for example that the iodides and bromides interfere with the luetin test. "Normal non-syphilitic persons, reacting negatively in the luetin test, may show marked reactions when tests after the oral administration of sixty or more grains of potassium iodide."

Intracutaneous tests are more readily influenced by the drugs mentioned than are the cutaneous tests. Both types of tuberculin reaction become more extensive after the administration of iodides or bromides.

It is not at all improbable that failure to recognize the influence of medicines ingested may account in part for the divergence in results obtained by different observers as a result of their experience with luetin reactions and similar diagnostic tests.

Obviously it is of considerable importance to differentiate between skin reactions of specific origin and those due to the administration of drugs which appear to increase the inflammatory phenomena and thus subject the test to reasonable doubt.

Teaching Industrial Medicine.—Rapid strides in industrial medicine and surgery are evidenced in this country, but no single step is fraught with greater significance than the experiment of Rush Medical College in offering a course on Industrial Medicine and Surgery, as has been described by Mock in the *Interstate Medical Journal*, March, 1917. He points out the content of this particular curriculum to be as follows: "A course on industrial medicine and surgery, in order to be comprehensive, must teach both the undergraduate and postgraduate students the following branches: occupational diseases—prevention, diagnosis and treatment; supervision of health of employees, including periodical medical examination of applicants for work, prevention of disease among employees, industrial hygiene, and plant sanitation; care of injured employees, which must include emergency surgery, first aid, all medicolegal aspects of the result of injury and the surgeon's part in accident prevention work; prevention of accidents; including the 'safety first' movement, cooperation between the doctor and the safety engineer; socialized medicine, including the treatment of certain diseases, the class of employees who should receive free medical care, the work of the visiting nurses among employees, and the duties of the social worker."

This broad plan contemplates securing cooperation between employers and the patients, who are first to be received at a night clinic. There is a definite aim in the education of the employers in the matter of safeguarding the health of the employees and the education of the employee along the safe lines of disease prevention applicable to himself. Further, the department will seek to advise both parties, with refer-

ence to the adjustments in industry deemed necessary to secure a wise adaptation of the work and the worker.

The study and treatment of occupational diseases certainly represent a tremendously important function of the clinic thus to be established, for its value can only be emphasized thru the practical application of the facts ascertained and developed to the every-day needs of industry.

The work in its educational aspect is not to be limited to the training of students but is to branch out into a field of social medicine, with a willingness to do more than give emergency treatment for conditions incident to the damage resulting from industrial employment. There is a wise plan involved in advising employers concerning hygienic and sanitary measures requisite to prevent the disability of employees and, in so far as may be possible, to obviate the recurrence of an accident or the continuation of any unhealthful conditions leading to the handicapping of the workers.

This extension of medical activities is a step in the right direction and tends to demonstrate a large field of usefulness which challenges the attention of other medical schools. There are many dangers that the services performed will be misconstrued; and undoubtedly some physicians will believe that their rights are being infringed upon. A few practitioners will regard the entire proceeding as of doubtful value as compared with the grave danger of interfering with the natural development of medical practice. By some, objection will be found in the tendency to paternalism or the injection of the idea of state medicine disguised as medical education. The work, however, will be hailed with de-

light and watched with interest by those interested in the development of social medicine; and the example of Rush Medical College will be urged upon other institutions claiming to be in the forefront of medical progress.

Certain types of venereal diseases require hospital treatment during the most active and infective stages. Only a small portion of the general hospitals, however, accept patients afflicted with acute venereal diseases and many discriminate against medical cases with known complications of gonorrhea or syphilis. While it is undoubtedly true that with abundant hospital facilities their use would not be freely accepted, there is no reason why hospitals should bar patients suffering from diseases recognizedly dangerous to the community. From the standpoint of disease prevention, the hospitals should afford an opportunity for the proper care of those infected with venereal disease and actually requiring institutional treatment. It is impossible, of course, to set apart hospital beds merely on the basis of protecting the community from a disease running a mild course even tho the victim thereof is a public menace. There is every reason, however, to establish harmonious relation between hospitals and dispensaries so that proper provision may be made in one institution for the treatment, supervision and control recommended by the other one.

As fundamental bookkeeping in public health, registration is imperative. At the present time a large number of contagious diseases are recognized as reportable tho their general damage to the community is far less than that resulting from venereal

diseases. The invalidism, blindness, crippling, racial deterioration incident to venereal infection are sufficiently general and serious to warrant organized efforts by health authorities to secure their diminution. It is impossible to organize a systematic campaign for the protection of the public health from the catastrophic damages resulting from uncured venereal diseases without an accurate knowledge of the persons suffering from the maladies in an acute state. The rights of the individual are by no means sacrificed thru registration. This matter has been satisfactorily adjusted for tuberculosis and other contagious diseases. The greatest difficulty obstructing the registration of venereal diseases lies in the fact that they carry opprobrium. While moral issues are of immense importance to sanitarians and cannot be rejected, a medical propaganda for prophylaxis should insist that venereal diseases be removed from the category of secret diseases and be considered as ailments meriting public record without publication. The rights of individuals must be adequately guarded but similarly the rights of the public must be protected. This is a rational public health viewpoint.

The problems of education, legislation, venereal prophylactics and the control of prostitution and alcoholism represent distinct phases in the control of the venereal diseases. From the medical standpoint the basic elements in the control and prevention of gonorrhea and syphilis are the registration of patients, the extension of diagnostic laboratories and the establishment of a modern system of dispensaries and hospitals capable of caring for those already infected with venereal diseases.



An indictment of the whole medical profession which appears in a recent issue of the *Texas Medical Journal* is so ill founded, unwarranted and unjust that we cannot refrain from referring to it with indignation and regret; indignation at the lack of regard for the great harm that may be done to many clean, high minded men totally innocent of the charges made, and sincere regret that a responsible publication would lend its pages to such a base and unmerited accusation. In all earnestness and sincerity we wish to protest against the statement that vulgar and questionable stories are common at medical banquets or social gatherings. The writer has probably attended rather more medical meetings, conventions and conferences, with their incidental social functions, "smokers," etc., during the past twenty years, than the average physician, and he is pleased and proud to say that he never yet has heard any doctor use language to which any one could offer the least objection. The writer's experience may have been exceptional, but he does not believe so. As a matter of fact the great majority of men have an aversion to listening to "off color" stories, especially when recited in public. Doctors offer no exception to the rule and it is a false and wicked idea to advance that there is something in the study or practice of medicine that makes medical men particularly fond of *risque* stories. In our opinion, the reverse is the truth, and the obligations and duties of a physician's life soon fill the young practitioner with a sober sense of responsibility that rarely fails to refine and uplift him; things low, petty and sordid become distasteful and hateful. Not only does his mental and moral stature increase, but he becomes proud and jealous of the higher, nobler aims and purposes that make up his life. Men of this quality—and we can say

without fear of contradiction that it describes the average physician who is imbued with the spirit of his calling—has no inclination to hear or tell stories of a vulgar nature.

As a matter purely of respect for himself and his vocation, the average physician does not want his fellow workers to associate him with stories that must be told with an apology. This is why we believe the article in the *Texas Medical Journal* is so mistaken in concluding that the incident on which it bases its criticism is typical of all medical meetings. Isolated instances of such conduct may occur. The medical profession has its quota of those who can be relied upon to do the wrong thing, just as every other calling has. But happily these are in the minority, and to condemn the whole profession for their mistakes is not only unfair but indicates a very imperfect knowledge of the medical profession. It seems to us that the *Texas Medical Journal* owes an apology to the medical profession generally—and to Texas physicians in particular—for its hasty, ill-advised and absolutely unmerited criticism.

Medical Men for Administrative Work.—At this grave time in our country's history when it is necessary to marshal its brain assets as never before, it is a matter for genuine regret that medical men are not called on more frequently for positions of trust and administrative service. Commissions and committees for the investigation and direction of matters of importance are being appointed, but with the exception of those pertaining to strictly medical problems, it is rare that the names of medical men appear among the appointees. It is entirely probable that the failure to include

so few doctors in general commissions and committees charged with the consideration and control of public affairs has been due to the established idea that the physician is so specially trained, and his whole thought and attention are so devoted to a single line of activity that he has no knowledge, experience or capacity in regard to anything outside of his circumscribed field. With all due respect to those who entertain this opinion, we wish to state our earnest conviction that it is wholly and absolutely wrong. There is no class of men that includes a greater number fitted for public positions requiring high intelligence, sound judgment, tact, and a broad and comprehensive knowledge of men and affairs, than the medical profession. The United States has a number of medically trained men in high places who offer substantial confirmation of the value of doctors for administrative work. Other nations look to their medical men for public service as freely as they do to any other class—and often more so. In fact in many countries, the doctor is usually the leader in each community, serving as burgomaster, mayor, deputy, or whatever the office may be that requires trained leadership.

The medical man's education, training and experience, plus the innate attributes that led him to choose his vocation, give him the ability to gauge mankind, and grasp the significance of things quickly and accurately. He is shrewd, earnest and able to form his opinions without delay. He is good natured, optimistic and usually a "good mixer." He is liberal in his views, yet conservative in his conclusions. He is tactful yet not afraid to voice his convictions. He is positive in his opinions, and while ready to stand by and fight for what he believes to be right, he is open to argument and willing to accept—and be guided by—new facts and evidence. Finally, the physician is a worker, a man who is not easily dismayed by difficulties; if a piece of work has to be done, nothing remains but to do it, faithfully, conscientiously and efficiently. This is the spirit that doctors have always shown when the people have seen fit to call upon them for services in addition to their professional duties.

Knowing doctors of medicine as we do and having the genuine admiration for their administrative and executive ability we have,

we would like to see two or more physicians on the commissions to be sent to Russia and other countries, the Food Commission, and every other committee charged with governmental affairs, investigations and missions. There are hundreds of physicians whose extra-professional work in their communities is deeply appreciated by their fellow citizens. These medical men are not the kind who court the limelight or who constantly have a line out for every available position offering a chance for publicity or glory. They are quiet, earnest men, who seek nothing, ask for nothing and yet are the ones invariably called on when emergencies arise. Such men lend strength to any undertaking with which they are connected. It is easy to find these men, for inquiry always brings their names to the fore. Therefore, when men are needed, strong men, men who can do things faithfully and well, with no pride except in the quality of the service and no purpose except the end in view, the Government should not overlook its citizens who have had the advantages of medical training. One thing is certain, if it does, an asset will be neglected that the country can ill-afford to overlook when the nation's prayer, as in the days of '76 and '61, is "God give us men!"

Lucky America!—While many of our representatives in Congress are playing politics, painfully explaining their votes for the benefit of their constituents, "back home," and strengthening their political fences with apparent indifference to the urgent needs of the country, thank God there is one man in Washington whose single thought is to serve the nation and safeguard its interests. We refer particularly to President Wilson. We may differ with him in party politics, but when as President of the United States he shows so conclusively that he represents no party or section, but stands wholly and unreservedly for the American nation, we would be untrue to every decent impulse if we did not give him loyal support. Strong, steadfast and capable, he gives the whole world trust and confidence in our national ideals and institutions. The country is safe in the hands of a man whose purposes are so surely guided by his devotion to American principles.

Another official whose faithful service has been a constant inspiration to his fellow citizens is Mayor Mitchel of New York City. Never have the affairs of the City been so well administered, and never have the people felt so sure that their interests were being properly and honestly looked after.

These two men we have especially referred to, deserve the heartiest commendation of their fellows for their fidelity and loyalty to the people's interests, and so do many other officials thruout the country.

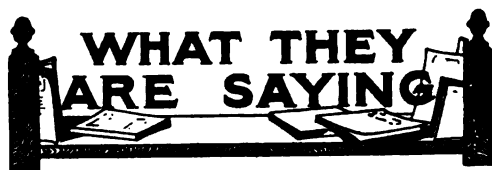
Truly, in this hour when able, faithful men are needed as never before, America is fortunate in those at the helm.

Stricture of the urethra is markedly antagonistic to the development of hypertrophy of the prostate, says a writer in a recent issue of the *Jour. of Homoeopathy*, owing to the long-standing chronic prostatitis which it causes. Therefore, in any case of stricture of the urethra in later life the absence of enlargement of the prostate may be assumed.

The recognition of this fact is important in the management of retention of urine in later life, and has not been sufficiently understood.

The management of retention of urine due to stricture and that due to prostate is radically different and has a markedly different prognosis.

Surgical Treatment of Acute Epididymitis.—McKenna (*Surg., Gyn. and Obstet.*, Dec., 1916), concludes that surgical interference in acute epididymitis is necessary only when the patient is suffering excruciating pain. When this procedure is carried out it is necessary to divide the fasciae so as to free the tension from the testicle as well as from the epididymis. Patients are less apt to be impotent if the posterior wall is divided carefully and the pus drained off, than if the pus is left for nature to absorb. A blind stab operation should certainly not be done or even considered. It is not enough to expose the epididymis and drain it; all the fasciae should be free. It is not necessary to split the epididymis but only the infected chamber which stands out clearly.



Dreams and Their Interpretation.—

"The subject of dreams has interested mankind," says Sir Robert Armstrong-Jones in the *London Practitioner*, (March, 1917), "since the earliest days of primitive culture, and long before the dawn of history. Many and varied have been the speculations in regard to them, and the philosophers of antiquity entertained great diversities of opinion as to their cause and meaning. Dreams may be said to have a world of their own, and to have no links of connection with any other facts in human experience. The savage regarded the dream-world as similar to, only more remote than, the one he dwelt in. When he fell asleep, his second self left his body for unfamiliar haunts, where he met the second selves of his dead ancestors. Socrates believed in the divine origin of dreams. Lucretius accounted for them on the principle that ideas or thoughts were material things, which could be detached from each other and be made to strike upon the mind. Porphyry ascribed dreams to the influence of a good demon who warned the dreamer of the evils the bad demon was preparing for him. Baxter, in his work upon the soul, attributed dreams to the agency of good spirits, which descended from their proper sphere and condescended to weave midnight visions for poor mortals. As sleep has something awe-inspiring and inexplicable, so dreams viewed from the waking state have no less strange or perplexing a reality.

Dreams have been defined as 'conscious processes during sleep,' a definition which implies a self-contradiction, for conscious processes deny sleep, and normal sleep is attended with unconsciousness; but this unconsciousness may indeed be slight, yet it is not infrequently profound and even complete. During deep sleep the senses are unaffected by external and even by internal impressions, yet it has been asserted that the mind is never at rest during sleep, and that there is always some dreaming. Dreams have also been defined as thoughts,

or a series of thoughts, experienced in sleep, i. e., a train of ideas presenting themselves to the mind during sleep. Today, the definition of a dream is 'the symbol of an unfulfilled wish,' the meaning of the symbol having to be interpreted by an assumed psycho-analytic 'code,' and because of its symbolic function a dream is looked upon today as having its root firmly fixed in the experience of the waking life, whilst its superstructure lies in the unreality of phantasms. It may help to understand the terms symbol and symbolism, if we state that they are only applicable when the dream is interpreted, i. e., the dream then becomes the symbol of the meaning elicited. The terms themselves apply to the dream as recorded or the manifest dream, which is always centralized round certain subjects connected with the waking experience, and not, as erroneously believed by some, always and invariably connected with sexual matters."

Oral Sepsis.—"We are obviously in need of higher average standards of knowledge on the subject of the relation of diseased tooth roots to secondary systemic diseases" asserts J. M. Anders in the *New York Medical Jour.*, (March 10, 1917), "and this," he goes on to say, "is particularly true of the major portion of the dental profession. On the other hand, physicians should be cautious not to diminish the masticating surface of the patient without reliable scientific evidence of an existing necessity for so doing. The reasonableness of my position in this matter will be, I trust, conceded when it is learned that within the past six months not less than six leading dentists have declared to me that countless teeth are being removed without justification merely because physicians, usually following an x-ray examination, by amateurs in many instances, have so decreed. It seems to me that such a state of things must tend to arouse the most ardent activity on the part of the dental profession in opposition to this rapidly growing custom among physicians. To advise the extraction of teeth that are merely suspected of being septic, will surely prove the ultimate disappointment and chagrin of the medical profession."

Dr. E. T. Darby, an acknowledged

authority, informs me that he is strongly of the opinion that many teeth are being extracted which should be saved by judicious treatment, but he also contends that it is better to sacrifice a tooth that has an incurable abscess than to jeopardize thereby the health of the patient. In a personal note to the author, Dr. J. A. Woodward, a prominent dental surgeon, says: 'The possibility of a misleading x-ray picture of abscessed conditions about the roots of teeth and the fact that a large percentage of these abscesses can be made to heal make it much the best practice to refer all cases of suspected oral sepsis to a competent dentist before ordering the extraction of teeth.' Surely to our progressive dentists must be accorded the technical skill and knowledge necessary to advise regarding and to treat dead, filled, or capped teeth which may or may not be septic. Hence, before peremptorily requesting that the teeth of their patients be sacrificed, physicians should seek a consultation with a specially skilled dentist. It would appear that an amazingly low estimate is placed upon the value of human teeth by a profession that knows, or should know, the importance of a good masticating apparatus to the digestive function—to health."

The Cancer Problem.—"What is the real problem of cancer?" asks Dr. L. Duncan Bulkley in the *Medical Record*, (March 17, 1917). "Surely," he continues, "it is not to increase the surgical activity, which has resulted only in a steadily ascending scale of mortality, which in reality is greater than that observed in any other malady! For the increase in the death rate from cancer throughout the United States from 1900 to the present time has been coincident with the greatest activity both in laboratory research and in the advanced surgery of the disease. I repeat, is it not time for us to stop and consider whether our laboratory work with the microscope on morbid tissues, and our experimentation on rats and mice, are truly serving to solve the real problem of cancer? Or whether we had not better turn our attention to human beings, and by careful clinical study of our patients discover where the fundamental error lies, which first induces the formation of an aberrant cell mass, which we call cancer,

and then continually feeds it by the same deranged blood stream, so that it becomes utterly uncontrollable and invades and destroys other tissues; while at the same time the anemia, pernicious and progressive in character, gradually saps the life of the patient, to a lethal end. For repeated and most careful laboratory studies have demonstrated great and significant changes in the blood in cancer. I hope to satisfy you that the mass which is excised is only the *product* of a far deeper systemic change, which has probably already produced other, more or less similar, masses or deposits elsewhere, in the bones and internal organs or lymphatics. So that surgical removal of the one often stimulates the development of others."

Rheumatism, a Metastatic Inflammation.—"Rheumatism," J. M. Smith claims unhesitatingly, in the *International Journal of Surgery*, (February, 1917), "is practically always a metastatic inflammation.

An arthritis which tends to recur is nature's warning of her effort to eliminate pus from some source.

Every case should be subjected to a most careful physical examination in our effort to discover the source.

We must remember that we may have the remains of an infection with the primary focus obliterated, or there may be a focus which we are unable to locate.

Rheumatism is an infection, but is not due to any one specific organism but to a number of different ones; the members of the coccus group are the chief offenders, especially the different strains of the streptococcus."

The Effects of Focal Infection.—"The most common constitutional symptom of focal infection that I have noticed," states F. A. Burton in the *American Journal of Surgery*, (March, 1917), "and concerning which very little mention is made, is indisposition or malaise, often to the extent of great fatigue, due presumably to the chemical toxins produced by pyogenic bacteria. Every otolaryngologist of any considerable experience has frequently observed cases of this kind. It is my opinion that a large per-

centage of patients applying to their physicians for relief from malaise, or even great fatigue, have one or more foci of infection somewhere in the body. The fact that such patients experience complete relief from the removal of the foci of infection affords the evidence of proof. No doubt in many a case the individual who has suffered for weeks or months from this symptom of focal infection, and who has during this period been working continuously, may naturally, though falsely, presume that whatever the degree of fatigue, it is due to overwork. Depletion of physical or mental vitality caused by toxemia from oral sepsis, predisposes to disease by lowering one's resistance, and oral sepsis lessens one's efficiency as well as furnishes the cause of a certain long list of constitutional diseases."

The Importance of Blood Pressure Tests.—"From the standpoint of the medical examiner," says F. A. Faught in the *Medical Record*, (March 10, 1917), "the following points seem worthy of repetition:

1. The blood pressure test should be employed in the examination of every applicant for life insurance.

2. Single readings, whether normal or abnormal, should not be accepted, when it is possible to repeat the observations. Average readings are more accurate and more reliable than single readings.

3. A closer restriction should be placed upon the maximum systolic than upon the minimum systolic variation.

4. The complete test should be universally adopted, since with it we obtain fuller and more reliable information concerning the cardiovascular and renal conditions.

5. The application of the 3:2:1 ratio is essential to appraise properly the sphygmomanometric readings.

6. The employment of the work test gives additional value to this study by demonstrating slight variations in the cardiomotor and cardiovascular mechanism, particularly the integrity of the heart muscle.

7. In other conditions in which the blood pressure test is of value, more attention should be paid to the complete readings and to other evidence of departure from normal in relation thereto."



DERMATOLOGICAL ASPECTS OF CHRONIC INTESTINAL STASIS.

BY

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From the standpoint of the advanced abdominal surgeon the question of intestinal stasis has been thoroly developed. Faulty drainage of the human cloaca has been conceded to be the fertile source of numerous systemic ills popularly epitomized in the term "constipation." This halting of the excrementitious tide was variously accounted for once upon a time. The variety of the explanations cast suspicion on them all. Defective innervation (the refuge of every lost cause in etiology) was the favorite phrase of the majority of investigators. Being hazy in conception it was comfortably non-committal. It did not convey any idea to the reader except that the writer knew a great deal more about it than he was ready to impart. It was a satisfying and sonorous mouthful. Others sought to put the blame of incompetency upon the diet. The food was too dry; it was too concentrated: it did not contain enough waste products to give the intestine the stimulus to expel it. This appealed to a great many clinicians who

clung to it despite repeated failures of a modified diet to correct the evil. The combination of the two explanations was highly esteemed. Naturally if the waste material was of a quality to fail to stimulate peristalsis and expedite expulsion then it was reasonable that with a higher degree of innervation the required activity would be induced. The two causes dovetailed beautifully. The only drawback was that constipation remained obdurate despite most of the efforts directed by this illumination. Exercise was proclaimed a mighty factor in overcoming the "sluggishness" of the bowel. In some imperfectly understood manner the prolonged movement of the limbs induced a periodic movement of the bowels; it sent a fuller blood stream to the walls of the gut; it increased the power of the circular muscular fibres; it churned up the fecal masses; in all these ways and perhaps in some other way which we did not utterly grasp exercise tended to induce evacuations. Episodal confirmations of this contention were inconclusive in the face of innumerable failures. "Sluggish liver" used to be a highly popular explanation among medical men of a past generation and is still stanchly adhered to by the laity. It never was quite clear what was the matter with a "sluggish liver." The nebulous impression was that in some uncertain way the organ had refused to act and was hanging like a lump

of useless ballast in the abdomen. The patient got sallow; his eyes were dull; and his spirits low. He was bilious. This was ascribed to drunkenness, gluttony, laziness or malaria; or when these causes were successfully eliminated it was blandly ascribed to constitutional peculiarity and allowed to go at that. The deliberate inhibition of the impulse to fecal evacuation, is also adduced as a frequent cause of chronic constipation. A bad habit is established which blunts the sensibility of the rectal nerves and permits accumulations to remain for days without the excitation of an expulsive movement. Everybody has experienced the effort required to empty the lower bowel if the impulse has been resisted because of the impossibility of immediately gratifying it. But obviously this is a temporary condition that should readily yield to a corrective hygiene.

The matter of diet has been mentioned as an etiological factor. There is one article of diet that is notoriously prone to stall the bowels. That is cow's milk. Its action is mechanical, it packs a lot of casein of the consistency of plaster of Paris in the mouth of the sewer and it is corked up tight. This is occasional and removable. None of the reasons assigned satisfy the mind of the scientific investigator as to the causation of constipation in general. With every reason hitherto assigned it was evident that there was an immense number of cases that did not come into the record. They were not cured by diet nor by exercise nor by systematic attention to the halting function nor by cholagogues, nor by heroic swilling of water; they were not cured by any or all of these devices. Obviously there was something amiss which explaining the rebellious cases would probably explain nearly all the cases. Bold men

dared to think and thinking dared to act. Operations on the abdomen for other conditions had shown the presence of certain abnormalities capable of producing the degree of obstruction resulting in chronic constipation. Internal hernias were discovered and loops of gut hanging across adventitious bands. Ptosus of the viscera antecedent to the bands and paralysis of viscera subsequent to the bands were accessory to the constipation. It was plain that none of the methods instituted on the basis of the old pathology would remove these physical obstructions to adequate function. It was equally plain that only the intervention of the surgeon promised permanent relief.

As invariably happens when a new idea is bruited conservative (or lazy) human nature growls in protest. Routinism resents innovations. Satisfied stand-patters in science as in politics view with disfavor the suggestion of change. It is a reflection on their own want of diligence and progress. It dislodges idols and creates new leaders. It shifts the balance of influence in another direction. Altogether it is a thing to be opposed and ridiculed and denounced, without the preliminary bother of an investigation. Thus it happened that the originator of this idea of chronic intestinal stasis due to mechanical obstruction was vigorously berated by his professional brethren as something closely akin to an imposter. He discovered the unpalatable truth that a prophet is never honored in his own country, for it was the recognition received in America that rehabilitated Sir Arbuthnot Lane in the good opinion of his English confrerers. Despite a mass of corroboration weighty enough to carry conviction to any open mind, it is a melancholy fact that many surgeons

are still sceptical of the man, his doctrine and his triumph. Ridicule is the form which this antagonism takes. Inuendo and shrugs and commiserating smiles greet the introduction of the topic. Discredit is sought to be cast by contemptuous indifference. This sort of opposition cannot be fairly met. Men who will honestly and courageously uphold a mistaken opinion are worthy of respect. We cannot quarrel with those who do not see with our eyes or for various reasons are incapable of grasping our conclusions. They can be answered and perhaps eventually persuaded. But the skulking thrust in the back, the furtive sneer, the derisive grin, the deprecatory headwag, the utterance of half truths with the stamp of finality; such methods do incalculable harm at the behest of jealousy or greed. However it is impossible to stay the march of truth indefinitely. "Crushed to earth it will rise again." Thus it is that the fact of intestinal stasis is steadily gaining support among the profession at large who realize its transcending importance, and have no interest in decrying it. In this country the work of Lane was ably supplemented by that of men like Doctor Bainbridge who enthusiastically threw themselves into the struggle for the furtherance of an idea that was meeting with so much resistance. Unremittingly they worked and taught and wrote until finally the tide of criticism gradually ebbed and fell. Now while unbelief is still defiant in certain prominent quarters, the majority of practitioners have acquired a comprehensive grasp of the subject and are leaving the fossilized conservatives in their impotent isolation. We would appear to have used the word "stasis" in the foregoing paragraphs as a synonym of "constipation." This was

merely for purpose of facilitating description and fastening attention by the employment of a term readily understood. Constipation that is the inability of the rectum to empty itself is characterized by the massing of waste materials in a situation where they can do very little harm. The absorption is slow in that particular section of the gut and the packed detritus is dry and yields little to the process. Hence it is that old atonic conditions of the rectum may be endured for many years with little or no detriment beyond the annoyance of straining at stool or continually taking cathartics. Various factors have been enumerated above as causative of this defective function. It is doubtless true that all of them may be capable of that much mischief. But this is not the state of things comprehended in the term "stasis." Once the distinction is grasped the fuller understanding of the serious abnormality opens up a pathogenic prospect truly stupendous. Stasis is Greek and means "standing." By derivation it comes to mean "halting." A little further straining at the sense and we have "slowing up." It is in this ultimate signification that we use it in the phrase "chronic intestinal stasis." We seek to convey the idea of a slowing up of the intestinal stream. The more or less thoroly digested pabulum, swallowed in response to the demands of hunger, or in the gluttonous pampering of an abnormal craving, swirls along the small intestine and instead of steadily traversing the absorptive areas in orderly and timely sequence, it encounters obstacles and delay. Its efforts to overcome the obstacles may induce a reverse peristalsis and the regurgitation of the spoiling fluid into the field of active digestion. The unduly prolonged retention of

the nitrogenized elements in the humid heat aided and abetted by the bacteria swarming in this promising territory, engenders putrefaction and the development of toxins of a varied and menacing character. Absorption of these leads to disturbances of many kinds thruout the general economy. The determination of the toxins to particular organs by the accident of local obstruction diversifies the opportunity for injurious action. Thus the pancreas, the gall bladder, the liver, the kidney, the ovary, may be directly attacked in addition to the vitiation of the blood stream which finds its way everywhere in the reaches of the circulation. The involvement of the pancreas thru the intestinal blockade may very plausibly account for diabetes mellitus. That organ is saddled with the responsibility for this fatal disorder; and here is a substantial reason for its perverse activity. The claim is made by the courageous discoverer of chronic intestinal stasis, that the demonstration in the case of pancreatic diabetes is complete inasmuch as operation for the relief of stasis has cured the diabetes. Two venerable aphorisms will be adduced to defend and contest this position. Sir Arbuthnot Lane will declare that "the proof of the pudding is in the eating." His opponents will triumphantly retort that "one swallow does not make a summer." To this he will reply that even if he is deficient in the supply of corroborating swallows, he can produce a variegated collection of birds whose aggregation makes quite a respectable substitute. Besides diabetes mellitus he will place rheumatoid arthritis. This is a bird of some pretensions. To these he will add tuberculosis general and local with much increase of prestige. Addison's disease lends a dash of color to the plumage.

Infection of the genito urinary tract thruout has been cleaned up by recognition of its intestinal source. Exophthalmic goitre has been as brilliantly vanquished. Ulcer of the stomach and duodenum have yielded promptly to the measures taken to relieve the stasis. This undoubtedly has forestalled the occurrence of cancer at the site of the lesser lesion. Visceral cancer being like cancer anywhere the result of continued irritation will easily follow the line of lessened resistance and develop upon tissues soaked with destructive toxins. Hence even in the absence of demonstrable ulcer, tumor formation may begin. It is fair to assert that such a consequence is as likely in a membrane permeated with inflammatory products and devitalized by chronic intoxication, as it is in the skin under analogous conditions. Even if our daring titled pioneer cannot arrogate to himself the successful management of established visceral cancer, he can with great show of reason maintain that in curing ulcer he has removed the conditions eventuating in cancer.

In considering the testimony offered in support of these apparently magical results, it will not do to deny and denounce it simply because it runs counter to our preconceptions and appears to prove too much. The character of the witness in a court has a strong bearing on the credibility of his utterances. That is why tricky lawyers seek to impugn the standing of the witness when they cannot involve him in contradiction. Our information on intraabdominal pathology has not been of such a trustworthy character that we can afford to gird at any one who has worked out a theory incompatible therewith. If we have been too dull to see what was causing many of the obscure maladies

afflicting mankind we display monumental selfsufficiency and conceit in questioning the vision of a better man. It is our plain duty to give him thoughtful heed when we have established his respectability. If we can withstand him well and good. If not we must as reasonable beings accord assent, or at least courteous attention. If in seeking to determine the cause of the hebetude and dulness and myalgia and irritability and bilious crises so common in the conditions grouped under the term constipation, we are assured that the lower bowel is not primarily at fault in the vast number of cases, but that all these symptoms are attributable to obstructive lesions higher up, delaying the ileal effluent, we are not to scoff at this explanation, but are to diligently inquire what has brought about these structural defects. We shall learn that when man assumed the upright posture and turned his eyes towards the stars, he paid a penalty for his newer dignity in visceral ptosis. His mesentery was meant to sling his hollow organs vertically from his spine. As a quadruped he was properly constructed. As a biped he was out of plumb and gradually his plumbing got out of joint. One cause and another operated to aggravate the derangement until finally a section of the gut sagged badly out of position and dragged on the preceding sections. Nature to offset this disabling tendency passed supporting bands under the straining sections. These served to limit the ptosis but also furnished a resisting tissue over which the hollow viscus was bent like a piece of hose hanging over a fence. The bend was angular and narrowed considerably the lumen of the distorted tube. This is the crux of the question of stasis. Behind this angular narrowing the rising tide of putrefaction beats and eddies. Some easing of

the pressure may come in time from slow percolation thru the insufficient orifice; but the delay has permitted the further deterioration of the festering pool and the absorption of evil elements into the circulation. No man knoweth the possibilities of toxic specialization possessed by such an obscene "hell broth." Shakespeare might have got his inspiration there for what his witches brewed in Macbeth. Certainly no man can reasonably deny the etiological sufficiency of such a mixture in any of the unsolved ills of life. Unable to account for a multitude of maladies on any but the vaguest hypotheses we have been for generations harking back to the intestinal tract as a likely source of mischief. We have felt the need of free catharsis. We have sought to counteract the putrefactive changes in the imperfectly digested ingesta by administering antiseptics and the Bulgarian Bacillus. These are trifling make-shifts whose influence is of the most inconsiderable kind. No conspicuous or enduring benefit could be expected from a measure that did not remove the cause of the putrefaction which had been ascribed to constipation and to some unknown deficiency in the digestive secretions. The real reason for the putrefaction was the reason for the constipation, a retardation from mechanical obstacles of the passage of the digested material onward to the point of its orderly extrusion from the bowel. While we are cautioned to remember that constipation does not necessarily mean stasis, it is nevertheless true that stasis usually means constipation. Nearly all the cases coming for operation have exhibited this symptom, altho occasionally severe cases are accompanied by diarrhea, due to fecal overflow. So in the mind of the practitioner it is just as well to use the

terms interchangeably, because, after a futile effort to effect by diet, hygiene and exercise, the adequate operation of the bowels, he will the sooner be driven in a large proportion of cases, to the realization that there is something of a structural nature interfering with function. Linking constipation with stasis in this relation he will the quicker abandon ineffectual tinkering. The remedy for chronic intestinal stasis is the raising of the blockade. This is effected by mechanical means. Surgery in the incisive sense is not always indicated. Surgery in the orthopedic sense may be sufficient. Orthopedia is defined as the correcting of deformity in any part of the body. An abdominal belt bracing up the prolapse intestines, thereby taking off the pull on the angulated sections, is sometimes enough to overcome the difficulty. Supplemented by mineral oil as a lubricant to ease the mass past a constricted bend, the simple measure suggested may carry the patient along in a satisfactory condition. The exclusion or restriction of animal foods will reduce the chance of putrefactive toxemia. If these conservative procedures fail other and more serious ones will come under consideration. Weighing all the circumstances it will have to be determined whether the patient's condition is such as to demand heroic action. If life is threatened or efficiency or mentality, then the risk of an abdominal operation becomes a matter of secondary importance. It were better to hazard all on the chance of a radical cure than stumble along a useless or tortured hulk. For example a victim of rheumatoid arthritis would display rare good judgment in electing to be operated on in the hope of cure than to gradually develop into a wreck of helpless deformity. If a man's intellect were dulling under the

persistent hemic vitiation so that he was losing his economic effectiveness there is no question of the course that should be pursued. In every case it is a matter to be settled by a deliberate consideration of relative values. The operation itself has two phases. In some cases cutting the adventitious bands and straightening out the kinks proves sufficient. In other cases it is necessary to short circuit the gut that is to remove the large intestine and implant the ileum into the rectum. The foregoing pages are a portentous preliminary to a probably feeble conclusion. It will be something on the order of "the tail wagging the dog" to begin a paper on dermatology and devote the weightiest part of it to abdominal surgery. But it would be useless to seek to illustrate the consequences of intestinal stasis upon the skin if the causative factor were not clearly understood. While all this has been infinitely better expressed by Dr. Bainbridge and the other famous men who have fathered the idea, still repetition serves to impress and also to make smoother reading. Busy men, if they encounter a statement that is not perfectly clear may never get time to look it up and the whole article will lose interest and value to them. Many subjects fade into the background of memory, if not recalled by constant contact. If one of these is referred to in a manner that does not bring it vividly into the mind, annoyance and dissatisfaction result; when the occasion is lacking for confirmatory research. If the whole matter is gone into again be it ever so briefly the reader pursues the even tenor of his way and honors us with his close attention.

It has been a truism since the dawn of intelligent observation that sluggish bowels are bad for the skin. It is probable that the women of the Paleozoic age were chided

by their medicine men for inattention to regular defecation if a pimple appeared upon their faces. We do not know whether they ran to acne or not, lacking corsets and other provocatives of constipation, but if they did we may be assured that the blame was laid in the proper place. This etiological association seems to have, like the demonstration of Deity "the universal consent of mankind." It was no surprise then when intestinal stasis, the origin of most of the constipation, was adduced as the origin of many cutaneous disorders. The boldness of the application staggered us a little at first. When it was gravely assigned as the cause of Addison's disease with its pigmentation of the whole cutaneous surface, a pretty strong demand was made upon our confidence. However when the clinical picture was effaced by the radical treatment of the stasis, assent was inevitable. We recall perfectly the association of disease of the suprarenal capsules with this unsightly bronzing. But what affects the suprarenal capsules? Is it not a bacterial or toxic irritant derived from the intestinal melting pot? The dirty hue assumed by some patients in avowedly intestinal toxemia is proof conclusive of the decided intimacy between the inner and outer integuments. We are all familiar with the sallow cheek and fishy eye of the peristaltic sluggard. We are also familiar with the greenish-yellow manifestations of the so-called bilious crisis. It is obvious that tinting of the skin is rather a usual phenomenon in intestinal inefficiency. Why may we not seek in the same situation the explanation of cloasma? The uterine element appears to be incontrovertible in many instances, but how far coincident intestinal stasis may be accessory is a matter for further investigation. The conviction

has been forced upon us that in Addison's disease the suprarenal glands respond to an irritant generated in the crippled gut. Why may not the same condition prevail with regard to the generative organs? It is fairly assumed that the thyroid is provoked to erratic action by the same influences that disturb the suprarenals. Goitre with its train of torturing nervous symptoms is frequently marked by disfiguring cutaneous splashes. Thyroid atrophy is accompanied by a waxy puffiness of the skin. Both manifestations of the far reaching effect of intestinal stasis have been removed by operation.

Conceding that hyperpigmentation may be due to intestinal stasis it is not improbable that depigmentation, or leucoderma, may be likewise accounted for. Whatever determines an excess of pigment to a part may conceivably determine its complete removal. Aberration of function may operate in either direction. Confirmation of this is found in the thinning of the hair upon the head, and its increase in situations in which it is usually inconspicuous. It is no straining of the probabilities to ascribe alopecia areata to an eccentric execution of this pathological impulse. We have no reputable etiology for alopecia areata. It is frequently charged to defective innervation, which as we have already explained is a catch phrase devoid of practical meaning. The condition inhibiting the follicular nerves is the quest of the real clinician. This may be confidently pursued in the halting tide of intestinal putrefaction. The effect of the toxins, therein developed, upon the central nervous system is evinced in irritability of temper, palpitation, tremor, pallor, and coldness. The deflection of part of this perverted activity to the hair follicles might readily supply the

inhibitory property, of which we are in search.

Scleroderma is a waif in the domain of etiology. As was to be expected, it is attributed in desperation to defective innervation. Defective innervation might aptly be described as the first cause in pathology. It seems to be omnipotent, eternal, self-sufficing, and inexplicable. Anything that goes wrong in the economy—defective innervation! The pathological anatomy of scleroderma consists primarily of vascular disturbances resulting in the hypertrophy of white fibrous, elastic, and muscular tissues. The primary change in Raynaud's disease is also a vascular one and it is sometimes the precursor of scleroderma.

Raynaud's disease has been confidently claimed by Lane as a product of his intestinal "cesspool." The coldness and numbness of the extremities which we encounter in some stasis cases need only aggravation and continuation to be transformed into the more serious condition.

Another acutely offensive and hitherto irremediable affection of the skin is bromidrosis. It has been synonymized by some observer with a leaning towards virile directness as "stinking sweat." It needs no description. It is diagnosed by the nose. It is a source of extreme mortification to its victim and of uncontrollable aversion in her associates. It varies somewhat in its intensity. Sometimes its radius is wide and then the condition is pitiable indeed. Sometimes it is noticeable only on close approach and then fairly satisfactory social adjustments may be made. There is no doubt that this woeful affliction is directly dependent on chronic intestinal stasis. The stench of the stagnant ileal tide is matched by the stench of the sufferer's hide. Here is a condition

where operation would be admissible for the raising of the ban of social and commercial ostracism.

Hyperidrosis is an inexplicable phenomenon on any other hypothesis than that of toxemia from chronic intestinal stasis. It has been hinted above that some stasis cases do not give a history of constipation. The cesspool sometimes has an overflow incontinence as Dr. Bainbridge has so graphically explained and we have the poisoning centre above accompanied by offensive evacuations below. So we should not dismiss the likelihood of stasis because we are assured that the patient's "bowels more regularly." Radiography should be invoked to settle the doubt because hyperidrosis is far more than an annoyance. It unfits the patient for most of the remunerative occupations of civil life. Dermatologists recognize the influence of intestinal toxemia in the production of varied outbreaks on the skin. These exhibit all degrees of intensity from a generalized dermatitis exfoliativa to a localized erythema multiforme. They may be due to the ingestion of articles of diet to which the individual reacts disastrously. *A fortiori* they may be due to chronic conditions favoring the development of alkaloidal poisons and brought to acute activity by some trifling dietary indiscretion. One man eats a frankfurt sausage and never hears from it. His digestive tract is normal. Another eats the same thing and breaks out like a boiled lobster. His intestinal tract is "no thorofare." That sausage rots in him and accentuates the prevailing putrescence. His system accustomed to a certain amount of intoxication reels under the additional stress and the dermatosis is one of the results. This applies also to urticaria, which is complicated by the presence of

itching. Even granting the identity of the acne bacillus, it is generally conceded that the eruption depends in great measure on the thoroness of the body drainage. We attack the bowels vigorously, the while we apply our lotions to the face. Our success with acne has been variable. Occasionally we have brilliant results. Many times we have dismal failure. Some of this is due to the unfairness of the patient to himself. If instructions are carried out religiously there is a better chance under given conditions of achieving success. But even when we realize that every possible effort is making on the part of the patient, we shall be frequently grievously disappointed. We are encountering obstacles that the means at our command will not overcome. We are trying to clean up intestinal stasis with rhubarb and soda!

Unanimity prevails regarding the effects of constipation on acne. Yet many individuals live out their term habitually constipated and exhibiting never a sign of acne. As has already been shown the effects of simple packing of the lower bowel are much less pernicious and much better borne than the retention of the fluid and readily absorbable toxic elements further up. So when we meet with scant success in reclaiming the skin we may as well admit that our method of dealing with the bowels is inadequate. We may empty the rectum but we do not tip over and empty the offending "cesspool." If the situation is grave enough to warrant surgical intervention we may advise the patient of that road to recovery. Is it possible that we should ever advise laparotomy for such a trivial thing as acne? Is acne such a trivial affliction? Many times, yes. Many times, no! Acne is an embarrassing disfigurement to any sensitive woman. It keeps

her back where her natural vivacity and intelligence would push her forward. It frequently prevents lucrative employment. It frequently prevents matrimony. It frequently chills the ardor for a professional career. In these days of impudent presumption on little information it excites the suspicion of other and discreditable conditions. Is laparotomy so completely out of perspective in the contemplation of such a picture?

Other forms of pustular dermatitis are chargeable to the delayed ileal effluent. The older men of a past generation who saw in every skin disease a constitutional dyscrasia were not far amiss in dosing their patients with castor oil. They "buildd better than they knew." Shooting in the dark they were aiming straight at the *fons et origo* of a multitude of human ills. Oftentimes they triumphed with their cry of "eliminate and deplete."

Eczema! good old reliable eczema! The indestructible bulwark of the science of dermatology! What a refuge for the afflicted—diagnostician! What an oasis of delight in the arid desert of indistinguishable lesions! After we had groped in mounting dismay among the confounded little flecks that looked all alike, what a sigh of relief when we could lift our weary eyes and murmur "eczema" We dermatologists would not surrender "eczema" for any possible consideration. Where should we be without it? We might as well give up the whole business as that which makes it practicable. It is in the intestinal tract that we have long recognized the fault of eczema to lie. Attention to the bowels and the diet have been prime requisites for the satisfactory management of the disease. Minimizing in no degree the ulterior effects of local irritants we are still assured that to get lasting results

our treatment must include the elimination of toxins *via natural*. Here again as in acne we are often confronted by the apparent contradiction that with active catharsis we are unable to favorably influence the lesion. And here again the same explanation holds. We must employ measures that tip over the cesspool and establish adequate body drainage. Mineral oil and a bandage with proper restriction of putrefiable ingesta may contribute largely to the desired result. If they fail it is in order to consider whether the annoyance and disfigurement are great enough to authorize graver measures. Insomnia, pruritus, repulsiveness form a triad of indications of a very serious character. Men have been driven to the verge of distraction by the itch that will not permit them to sleep and forces them to unseemly demonstrations in public assemblages. As suggested in speaking of acne all skin lesions look alike to the laity and spell "syphilis." "A censorious world, construing all evil."

It might be faring too far afield to discuss the possibility of pemphigus and mycosis fungoides and acanthosis nigricans being related to the faulty action of a damaged gut. Still in the absence of anything but the merest surmise regarding their causation the suggestion is not utterly devoid of merit. Acanthosis is accompanied by cancer of the viscera. According to Lane, cancer of the viscera, is an occasional result of stasis. The other two diseases are of microbic origin. The microbes are unidentified. May they not be of the many generated and cultivated, harbored and nurtured in the hospitable atmosphere of the pestilential puddle? Acidosis has been firmly established as an etiological factor of importance and also as a terminal condition in many fatal affections. The diabetic dies of an acidosis,

the pneumonia patient also; the victim of Bright's, likewise. Anything interfering with a proper supply of oxygen to the tissues induces an acidosis. Many ingesta act in the same way. Microbic attacks invariably have the like effect. So we can heartily subscribe to the acidosis doctrine in all of its highly instructive ramifications, and still retain our conception of chronic intestinal stasis as the ultimate source of the pathogenic agencies inducing the various phases. If you say rheumatism is an acidosis, the same is conceded. If it be due to a bacillus, it is derived from the intestine. If it be due to errors of diet they aggravate the existing intestinal disturbance. Toxins are generated and absorbed. Arthritis appears. Erythema nodosum appears. Schönlein's disease appears. Urticaria appears. A dozen cutaneous diseases may be ascribed on the one hand to acidosis and on the other to chronic intestinal stasis and with perfect accuracy in both cases. It is of little practical importance whether the germs directly bring about the pathological picture or act thru the medium of acidosis. The end result is the same.

It would be possible to extend the enumeration of cutaneous diseases plausibly dependent on intestinal putrefaction to all of those not otherwise accounted for and even to many that are. But the purpose of this paper was not to frame a catalogue of reference but to stimulate a line of thought that might be fruitful of discovery. We are encouraged in this by the remarkable experience of the trustworthy men who have blazed the trail and opened up the promised land, and also by the consonance of their findings with the widespread conviction that the failure of competent peristalsis was responsible in a general way for many overt and obscure ills. We have felt much of what

Lane and his coadjutors have demonstrated. Instinctively in managing our patients we have endeavored to apply the principles that they have laid down. We did not know the full menace of intestinal incapability. We frequently went off at tangents about sluggish livers and defective secretions and enfeebled musculature. But we realized vaguely the need of elimination and undoubtedly accomplished a great deal of good with a hit or miss therapeutics. But now that we have come to understand the actual conditions existing in chronic intestinal stasis, our investigations have been placed upon a rational basis and our treatment is directed with vigor and precision. Castor oil—excellent and effective in its sphere of action—has given place to mineral oil which is the ideal lubricant for the deranged drainage system. Sagging bowels are supported by belts. Nitrogenized foods are limited rigorously. Failing with these measures we understand that we have not come to the end of our tether but that if the severity of the pathological reactions demand it operation may be resorted to, with every prospect of permanent relief. Chronic intestinal stasis therefore looms large in the domain of progressive medicine not only as a distressing local disorder accompanied by some remote annoyances, but as an anatomical distortion producing a persistent and increasing perversion of function with incalculable influences of the greatest gravity on every part of the organism. Some of these influences in the domain of dermatology have already been reviewed. It were futile to assail the applicability of others to the etiology of dermatoses for which we have no explanation. If the best we can offer in a number of perplexities is "etiology unknown" "etiology obscure," "probable cause defec-

tive innervation" or the like unsatisfactory banalities it were honest and wiser to turn for help to chronic intestinal stasis. It has explained many things. It may explain many more.

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HYSTERICAL SELF INJURY WITH RESULTING AMPUTATION AT THE SHOULDER JOINT— REPORT OF A CASE.

BY

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The following extraordinary case exemplifies the strange form of mental disorder which is accompanied by so great a desire to excite the wonder and sympathy of physicians and attendants that the patient is willing to suffer pain and even mutilation in gratifying this peculiar pathological vanity.

The patient was a well nourished young girl, 17 years of age, who was admitted to Mt. Sinai Hospital on October 3rd, 1913. With the exception of the condition about to be described she was in an apparently normal physical condition. The corneal and pharyngeal reflexes were normal; the skin sensations responded to the usual tests; the deep reflexes were present and not exaggerated.

She stated that about two years before admission she had been bitten by a dog and that there had been several operations on account of infections of the left arm following the injury. There was tremendous board-like edema of the entire left

upper extremity, rather sharply limited just above the insertion of the deltoid muscle. There was an ulcer-like wound of the forearm with sluggish granulations.

perature were within the bounds of normal it was decided to explore the epitrochlear lymph nodes and this was done on the 4th of October, by open operation. There



FIG. 1. Case of self-produced lymph edema of arm. Note the groove near the shoulder where constriction was applied by the patient. Also note cicatrix in dorsum of hand.

The ligneous edema was most marked in the epitrochlear region, and in spite of the fact that the pulse, respirations and tem-

peratures followed several attacks of dermatitis, erysipeloid in character, each accompanied by an elevation of temperature, the red-

ness, however, rapidly disappearing on the application of saturated solution of magnesium sulphate. The appearance of the

geal joints, the metacarpo-phalangeal articulations being extended. This contracture was evidently due to the cicatrix of some



FIG. 2. Note great general improvement a few days after the constriction was removed and the patient prevented from reapplying it.

arm and hand was that of elephantiasis, the fingers being held in the claw-like position resulting from flexion of the phalan-

previous operation upon the dorsum of the hand. (See Fig. 1). The progress of the healing of the wound was extremely slow.

For the sake of histological examination and also in the hope of relieving the condition a strip of the entire thickness of the board-like skin was removed on February 20th, 1914, the incision extending from the middle of the upper arm to a point below the elbow posteriorly. This wound was



FIG. 3. Result following amputation at shoulder. Large granulating wound in left hypochondriac region, probably self-inflicted.

closed by sutures and healed with rapidity. Nothing to explain the condition was found in the specimen.

When the patient had been in the hospital for some months it was decided to make a photograph of the patient. Dur-

ing preparation for the photograph the writer saw that she made an attempt to get rid of something near the upper part of the arm and on examination it was found that there was a narrow strip of adhesive plaster tightly encircling the extremity near the shoulder. It was then recalled that the patient had always kept her shoulders covered during examinations until she could prepare herself, and this sometimes took several minutes. The sudden termination of the pathological appearances in a groove near the shoulder had been noted but stupidly enough the cause had been unsuspected until the day of the photograph. After the discovery of the adhesive plaster strip the arm was put up in plaster of Paris and only a few days later another photograph was taken (Fig. 2) which showed a decided diminution in the size of the limb. The patient had been kept in bed following this final operation with constant improvement. When she was permitted to go about, however, the condition became almost as bad as before, probably because she surreptitiously caused constriction of some sort. She was then put to bed and kept there under close surveillance and by March 19th, about a month after the discovery of the true cause of her trouble, the hands were of equal size and the skin practically normal. There was, however, some *main en griffe* due to the operation on the dorsum of the hand above referred to. The patient was now discharged and the prognosis was thought to be good.

I then lost track of the girl, but three years later in response to a letter she appeared for examination. What was my astonishment to find that a shoulder joint amputation had been performed. This operation had preceded her visit by about one year, or in March, 1916, and had been

performed by Dr. Irving Haines of the Harlem Hospital, who kindly gave me the facts to complete this unusual history.

The patient had come to him with an absolutely helpless, contracted arm with osteomyelitis of the humerus, doubtless



FIG. 4. Radiogram showing condition of humerus, groove in soft parts near the upper end of the humerus and the shadows of three needles in the forearm.

the result of infection from some of her numerous wounds. At the time of the operation a lymph node was excised from the axillary region and was reported "mixed cell sarcoma," a diagnosis which Dr. Haines looked upon askance. The patient made an uneventful recovery and her general health has remained good ever since. On examining her, however, I found several large cicatrices on the left half of her trunk, two in the left mammary region, one in the posterior axillary line and in addition a large ulcerated granulating surface in the left upper abdomen. (See Fig. 3). This wound had a peculiar gelatinous appearance and made upon me the impression that some irritating substance had been frequently applied. In my conversation with Dr. Haines he mentioned that the radiograph of the arm had disclosed the presence of three shadows in the forearm which indicated apparently pieces of needle, the eye being near the point, evidently sewing machine needles, and our conclusion was that the patient must have inserted these herself. In this radiogram (see Fig. 4) the groove in the soft tissues near the upper part of the limb can clearly be made out and I doubt not that the patient had again resorted to the rubber adhesive strip before presenting herself at the Harlem Hospital. The osteomyelitis of the humerus had been diagnosticated by the X-ray.

This form of self injury is fortunately uncommon. The writer has met with but one previous case in which an amputation resulted. This was in a girl about 18 years of age, who was a patient in the surgical ward of Mt. Sinai Hospital, service of Dr. A. G. Gerster, when I was on the House Staff in 1888. She persistently infected the skin over the left knee cap

producing a painful ulcer, and she would put her fingers under the dressings and rub pieces of hardened plaster of Paris into the part. Yet she shrieked with pain at each dressing. Finally, under a plaster of Paris bandage of the entire limb so applied that she could not disarrange it the wounds healed and the patient went home. She later returned with the story that she had accidentally broken a needle off in her knee and Dr. Gerster explored the joint; it was before the days of Roentgen's discovery. The patient managed to infect this wound and eventually she lost the extremity, above the knee, the amputation being done by Dr. Gerster. Still she was not satisfied and reentered the hospital with a badly infected stump for which I did a reamputation in the mid thigh. Later still she went to another hospital where a hip disarticulation was performed and she then appeared satisfied. I followed the case for a few years after the last operation and then lost sight of the patient.

The writer believes that cases of this sort when clearly diagnosed are not suitable for general hospital treatment. Such patients should be committed for care in institutions for the treatment of mental disorders.

Thyroid Disease and Septic Tonsils.—

Thyroid disturbances, including typical Basedow's disease, are associated with septic tonsils so often, says Wm. S. Tomlin in the *Indianapolis Medical Journal*, and show in some cases such marked improvement in all the symptomatic conditions after tonsillectomy and adenectomy that the relation of cause and effect is proved as more than a suspicion. And persistent thymus with status lymphaticus has been demonstrated in so many instances as associated with the need of tonsillectomy that coincidence does not satisfactorily explain it.

SANATORIA FOR CONSUMPTIVES.

BY

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No problem before the medical profession, today, is of greater interest than that of the proper disposal of our consumptive patients. There are many reasons for this. First, and above all, is the undeniable fact that consumption, or phthisis pulmonalis, is the direst cause of death of a larger proportion of the human race in almost all countries and climates, as compared with acute contagious or infectious diseases, like smallpox, scarlatina, measles, typhoid fever, diphtheria, etc.—it destroys far more human beings than all these in their aggregate.

Again, it is a disease which incapacitates those affected for a much longer period, with respect to their ability of self-support. It becomes, therefore, a constant menace to the health of those who are inevitably brought into contact with persons who are thus attacked. Besides, it is well known that by judicious preventive measures the danger of individuals affected with tuberculosis to the well may be greatly diminished. It is only right, therefore, that proper government of the diseased patients should be instituted so as to protect the community in which they live. This becomes a more evident obligation as it is also recognized we are thus directly useful to those who are diseased.

It has been appreciated for a long while by well-informed medical men that there was a contagious element in phthisical patients. In what this existed precisely, was not known, until Koch made his famous discovery of the bacillus tuberculosis. In

it he recognizes the direct, primary cause of the transmission of the disease. Koch's judgment in this matter has been widely disseminated and almost universally accepted. Like all great truths, however, there are facts which controvert its too absolute acceptance, and even admitting its immense value and possibly literal truth, we must still recognize modifying conditions which limit its universal acceptance, unless we emphasize these in very strong terms. Admitting that without the bacillus there is no tuberculosis, yet even with the bacillus we must have the soil ready or prepared for its growth, development and all the evil consequences of its presence. In a healthy individual it is more than probable that the bacillus tuberculosis will be innocuous; it meets here with a barren soil, takes no root, breeds no disease. Susceptibility, hereditary or acquired, must exist, or the attack of the microbe remains without effect—literally, does little or no harm to the well.

Now, what should be our preventive measures—to carry out those which protect the few, the very few, by *isolation* and separation from their fellows? Or rather the much broader, more humane standpoint, institute such regulations as will benefit the race and cure the consumptives themselves as far as can reasonably be done?

Take the poor in our large cities and towns; are they not the ones most frequently affected, and for whose welfare we should be most concerned, since they are in much larger number? Let our legislatures, then, see to it that in the tenements the air supply is sufficient and good, let sunlight penetrate dark, ill-smelling rooms, let cleanliness be obligatory. Enforce proper oversight of food and water supply,

and soon, very soon, tuberculosis will diminish very greatly.

Of course, tuberculosis patients should not be permitted to expectorate on sidewalks, or floors or carpets, either in their homes or in places of public resort, but neither should healthy people be permitted to indulge in an unseemly, barbarous habit of that sort. It is opposed to decency, it shocks the senses of all refined persons—that is enough. Let it be interdicted on this ground, but not because contagion may be rife in every sputum that becomes dried and wafted in the air. It seems to me that the former idea makes an appeal to everyone who desires progress in refinement and civilization; the latter idea merely raises questions and antagonisms, and why? Because when thoroly sifted the proof is often lacking to make it absolutely demonstrable.

Now, then, should we build sanatoria thruout our land, equip them with every modern improvement, make a large outlay of private or public funds, only after a shorter or longer period of rest, nursing, medical care, to send back these same persons either cured, improved, stationary or worse, to conditions and surroundings which are the source and origin, in my judgment, far more of the widespread pest of humanity than the microbe whose inoffensiveness is demonstrable when the causes which breed it and make it important, cease to exist?

The microbic theory of disease is very well as a working basis for our sanitary corps, for our practitioners and even our surgeons, because everywhere it is recognized it makes *purity* thru *cleanliness*. But when we lose sight of other great and important facts of medicine—old, and older than our civilization, it dwarfs the

intelligence and leads to sad departures from common sense and logical deductions.

Let our laboratories do their work, let the microscope show us all it can, let chemical research go hand in hand with bacteriological culture; but never allow the practitioner with broad mind and lofty aims seek the lower level, which may belong to others, but which never can and never will be his due birthright.

THE RELATION OF THE EPILEPTIC SYNDROME TO INTESTINAL TOXEMIA.

BY

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The relationship of epileptic or epileptiform convulsions to intestinal toxemia is necessarily a difficult subject, as the term epilepsy and epileptiform convulsion covers a wide field, and it does not seem as if epilepsy could be considered a specific clinical entity; for under this generic term are included many symptom groups, which differ widely in their pathology and origin.

Intestinal toxemia is a term equally vague and only partially understood, yet, as we know, there are recorded cases where one undoubtedly finds a connection between them; and in my own practice I have had several such specific cases.

In epilepsy the convulsion represents a cortical explosion, induced by some superimposed motor sensory or toxic irritation, in individuals who have already suffered a primary basic impairment of their germ plasm. There are many conditions which have been regarded as etiologic factors in

the production of epilepsy; yet on analysis we are sceptical, that any one of them can logically be regarded as capable of causing the so-called epileptic syndrome; for as Spratling puts it "They are only effective in co-existence with an irritable nervous organization, one predisposed to convulsive manifestations."

It would seem that heredity, syphilis, alcohol and tuberculosis play prominent parts in damage to germ plasm and predispose to a nervous organization.

This would not appear theoretical, but real as shown by signs of morphologic arrest and deviations from the normal; to wit-ness, the size and shape of the skull, the high and narrow palate, the analous dentation of the ears, the digits and the general development. These are surface indications of other and more fundamental changes present throughout the organism.

The complications arising from intestinal toxemia are extremely complex and by no means entirely understood, and it not infrequently happens with the control of constipation, many of the toxic symptoms of the patient entirely disappear; there is an improvement of nutrition; they lose the greyish discoloration of the skin, the neurasthenia clears up and there is a change in the blood picture. Toxemia must be conceded as capable of causing general constitutional symptoms often of an extreme degree.

Food traverses the small intestine, which is relatively sterile, just as readily in constipated subjects as in normal ones; but in the former the normal delay in the terminal ileum may be greatly increased and subjected to prolonged action of the rich flora of that region, thus favoring the production of the toxic intermediate bodies.

Altho our knowledge of the bacterio-

chemistry of the caudal ileum and the large bowel are still in their infancy, nevertheless there is much evidence at hand to establish very conclusively that the prolonged bacterial action on the simple products of digestion may convert them into bases of extreme toxicity.

Mutch has shown that the different strains of the coli bacilli initiate different chemical actions; altho they, in themselves are indistinguishable in form; while Mallenby and Twort were able to obtain cultures of the colon bacilli which were capable of changing histidin, one of the simple end products of digestion into B-iminazo, a potent poison, and one which when injected in animals in small quantities, causes a marked fall in the blood pressure and symptoms of anaphylactic shock. Eyre examined the terminal ileum in sixteen constipated persons, and in only one case failed to cultivate pathogenic bacteria.

The colon bacilli have been regarded as the guardians of the bowel. Under normal conditions they inhibit the action of the anaerobes, generating substances which have a powerful anti-bacterial action, not only on alien groups, but on themselves.

The stools of normal individuals are much richer in colon bacilli than those suffering from constipation; the cause of this is ascribed to the increased opportunities to create bactericidal substances, thus inhibiting their own growth.

Moreover we know that under normal conditions, many substances formed in the intestines are excreted by the organs of elimination, the liver, kidneys, bowels and the skin.

Thru damage of function of any of these organs, we may have a storing up of metabolic products, of the effects of which, with the exception of urea, uric acid and the

SO-CALLED PERNICIOUS ANEMIA— REPORT OF A CASE.

BY

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The author of nearly every medical text-book in Christendom attempts to justify the contention that pernicious anemia is entitled to classification as a definite disease *sui generis*. The pertinent fact has apparently been disregarded that anemia *per se* is merely a symptom, and whether the underlying cause be tangible or intangible, it is certainly absurd to insist upon the identity of clinical symptomatology and basic pathology.

While the cause of so-called pernicious anemia has been diligently sought by scientific investigators for nearly a century, there is yet no consensus of opinion concerning the etiology. No hypothesis hitherto advanced seems to afford adequate explanation of the observed clinical phenomena. If it be true, as claimed by certain observers, that several basic features are concerned in its production, just why such causative factors should be actively operative in one instance, and totally inoperative in ten thousand others under apparently identical circumstances, remains an unsolved physiological problem.

Autoinfection or autointoxication from the gastroenteric tract has been accused of contributing to the production of nearly every mental and physical ill to which the *genus homo* is prone; and while no definite relationship has yet been established between anemia and the omnipresent *bacillus coli communis*, there is sufficient indicative evidence to suggest that therein may be found the explanation in many instances. This hypothesis appears reasonable when it

is remembered that anemia respects neither age nor sex, and that the colon bacillus is likewise no respecter of persons.

Altho the view is also at variance with text-book authority, it is believed anemia invariably represents a secondary manifestation. No clinical symptom which owes its origin to an underlying cause can be properly considered primary. The fact that the primary lesion cannot be conclusively demonstrated by any known method of investigation neither invalidates this hypothesis nor detracts from its plausibility. The various so-called types of anemia described as primary, secondary, acute, chronic, relapsing, etc., merely represent confessions of ignorance, as such terms only indicate the stage or degree of the clinical manifestations. It is recognized that anemia may be mild or severe, transitory or persistent, depending upon virulence of the causative factor; also that there may occur subsidence and recrudescence of the clinical manifestations in consonance with the quiescence or activity of the primary lesion, whatever it may be; but variation in degree or persistency is not synonymous with change in type or character.

The blood picture presented in pernicious anemia is fairly constant and usually characteristic. In addition to a tremendous reduction in the total amount of blood, marked changes occur in its physical, anatomic and chemic characteristics; it appears much thinner and paler in color than normal; the specific gravity is lowered, and less tendency to coagulate is noted; there is great diminution in number of the erythrocytes and leucocytes, with marked variation in their size and conformation; irregularity in reduction of the hemoglobin percentage is also a characteristic feature. While the clinical signs are less constant, extreme pallor

of the body surface from deficient blood supply, mental and physical inactivity, weakness and exhaustion, are almost invariably noted. Notwithstanding impairment in appetite and nutrition, emaciation is rarely observed. Respiratory disturbances are common. The character of the pulse and temperature may remain unchanged for a considerable period. Cardiac lesions observed during anemia are probably coincidental. Edema, subcutaneous, mucosal, retinal and internal hemorrhages occasionally supervene. Retinal hemorrhage, which has hitherto been regarded as an important diagnostic sign, is inconstant and may therefore be misleading. The urine may show little deviation from the normal standard.

As the history and the ultimate result in the following case differ in some essential respects from others reported in the literature, the details seem worthy of record.

CASE I—About March 15th, 1915, I was called in consultation with the family physician to see Mrs. T., aged seventy-two, who gave the history of malaria one year previously. Upon investigation it was found that her temperature for several weeks had ranged between 99° and 100.2° F. Her manner was exceedingly listless, and the body surface exhibited marked pallidity. However, she complained of nothing excepting an extreme degree of weakness.

Careful examination disclosed no cardiac lesion. Upon palpating the right side slight tenderness was elicited in the gall-bladder region. Vaginal examination disclosed no denuded areas, altho when removed the finger was slightly bloody which was somewhat suggestive of cervical malignancy. There was no edema, and the urinary findings were negative. With the exception of tenderness in the gall-bladder region and gaseous abdominal distension, there was nothing definitely pointing to the causative factor of her enfeebled and exhausted condition.

A blood examination had been made just prior to my being called in consultation, and showed a very definite picture of so-called

pernicious anemia, viz., hemoglobin 52%, erythrocytes about 2,000,000, leucocytes 8,000. Based upon the diagnosis of severe anemia, the cause of which seemed uncertain, the following treatment was adopted: Syrup of hydriodic acid 30 m., syrup of the iodide of iron 5 m., every three hours; the administration of colon bacillus vaccine every four days, alternating thereafter with Van Cott's combined vaccine. Specimens of the urine, blood and feces were obtained for further examination, all of which were found negative excepting the blood. The blood examination March 24th, 1915, showed the following:

Hemoglobin (Tallquist)	70%
Pmn. n.	45.6
L. Lym.	3.6
S. Lym.	39.2
Eos.	1.2
Myelocytes	0.4
Bas.	0.0
Endos.	0.0
L. Mono.	0.0
Blood flowed freely.	
Microcytes in large numbers.	
Macrocytes	45%
Poikilocytes very numerous.	
Normoblasts 20 per 1,000 reds (mature and showing incomplete mitosis).	
Megaloblasts scarce.	

The treatment outlined was continued without modification, excepting the addition of small doses of Fowler's solution to the other remedies, for about ten days. Some improvement was noted during this time. The blood was again examined March 31st, 1915, with the following findings:

Hemoglobin (Tallquist)	70%
R. B. C.	2,020,000
W. B. C.	5,400
Pmn. n.	68
L. Lym.	0.8
S. Lym.	29.6
Endos.	1.6
Normoblasts very few (2 seen).	
Macrocytes	45%
Microcytes fairly numerous.	
Poikilocytes numerous (decreased since last examination).	

Blood examination, April 9th, 1915:

Hemoglobin (Tallquist)	80%
Pmn. n.	58.2
L. Lym.	4.4
S. Lym.	32.8
Eos.	4.8
Poikilocytes, decreased since previous examinations.	
Macrocytes	30%
Microcytes, few.	
Nucleated reds, absent.	

Treatment was continued, the patient in the meanwhile being able to walk about the house, feeling much improved.

Blood examination, April 22nd, 1915:

Hemoglobin (Tallquist)	85% plus
R. B. C.	3,145,000
W. B. C.	8,200
Pmn. n.	51.6
L. Lym.	4.0
S. Lym.	36.0
Eos.	6.0
Bas.	0.0
Endos.	1.2
L. Mono.	1.2
Degenerated lymphocytes 5 per 100 lymphocytes.	
Nucleated reds, negative.	
Microcytes, few.	
Poikilocytes, no change.	
Macrocytes	15%

By this time the patient had shown the most marked improvement in her mental and physical condition. She expressed herself as feeling better than she had for several years. The last blood examination resulted in the following findings:

Examination June 22nd, 1915:

Hemoglobin (Tallquist)	75%
R. B. C.	3,040,000
W. B. C.	9,200
Pmn. n.	61.6
L. Lym.	2.8
S. Lym.	28.8
Eos.	3.6
Bas.	0.4
Endos.	2.8
L. Mono.	0.0
Poikilocytes, moderate (reduced).	
Nucleated reds, negative (including normoblasts and megaloblasts).	
Macrocytes	7%
Microcytes, negative	

Prior to the time I saw this patient she had been under the care of a most excellent physician, who had intimated to the family that there was little chance for ultimate recovery. He had administered cacocylate of soda hypodermatically for a number of weeks without any apparent beneficial effect.

It is recognized that relapse is the rule in cases of this kind, because of failure to determine and eliminate the underlying causative factor. This patient gave a history of malaria a year before, but I understand the diagnosis was not confirmed by a blood examination. It is not always wise to accept the diagnosis of malaria unless confirmed by finding the plasmodium in the blood.

I believe the anemia in this instance was due to infection, more than likely caused by colon bacillus invasion of the gall-bladder. This was my reason for giving colon bacillus vaccine. Of course the report of a single case means little, but if I have done nothing more than to suggest the necessity of looking beyond the microscopic findings for the cause of pernicious anemia, this report will have served its purpose.

CONCLUSIONS

(1) That pernicious anemia represents a clinical symptom the underlying cause of which is yet to be determined:

(2) That while other lesions may be responsible for a similar blood picture, such findings are inconstant; whereas in pernicious anemia the findings are constant:

(3) That pernicious anemia, being merely a microscopic symptom, should not be classed among the definite pathologic entities.

THE SUCCESSFUL TREATMENT OF ASTHMA.

BY

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Asthma is not a disease, it is a symptom of some deviation of normal physiology. It is a reflex symptom and may be due to great variety of causes. Two conditions are necessary to establish asthma. *First*, a hypersusceptible bronchial tissue; *secondly*, a local irritation.

When a patient suffers from copremia, he is subject to spasmodic contractions of voluntary and involuntary muscles. Cramps in the lower extremities are a common example. Asthma is cramps or spasm of the musculature of the bronchial system. The same conditions that cause cramps in one person may cause an attack of asthma in another. Cramps of the lower extremities

occur in persons who do a great deal of walking, standing or climbing of stairs. In such individuals these muscles are in a state of hypertonicity, hence quick to respond to any source of irritation. Sudden stretching or overstretching is sure to bring on an attack and some of these cramps are painful. A person who works in a dustladen atmosphere, or inhales noxious gases, or who by inheritance possesses an irritable bronchial musculature is liable to an attack of spasm. A decayed tooth may be a focus. Constipation is a common cause. In one of my cases gall-stones caused a reflex spasm in the lung tissue. Nasal polipy and infected tonsils are frequent causes. Gastric and intestinal disturbances not omitting acidosis are the most common causes. When the asthmatic attack is reflex to some intestinal cause, discover the cause in the following manner.

With a faradic current examine the spine. Certain areas will be found that are hypersensitive to the current. A red spot usually appears in such areas. Apply one pole of the faradic current over the red or hypersensitive spot or spots, the other a larger pad electrode over the entire lung area anteriorly. The interruptions at the vibrator point must be at least 5,000 or more per second. After applying this current for 15-20 minutes the spasm will be relieved and stay so for a number of days. By repeating this treatment daily or even on alternate days for two weeks, the patient will be free for months.

A little attention to the cause, general internal and external hygiene and a cure of this distressing symptom is possible. Asthma is always a bronchial spasm due to some cause, remove either the hypersensibility or the cause and you have the cure.

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THE TEMPERAMENTS FROM AN ANATOMICAL AND EDUCATIONAL STANDPOINT—A STUDY IN GROUPS OF CONSTITUTIONS.

BY

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Undoubtedly many people are impressed by the fact that no two human beings are alike, altho exhibiting a similar anatomical make-up and being endowed with similar mental qualities. Especially physicians realize that it is impossible to treat the same disease, affecting different people, by routine methods and during my college years while studying infectious diseases I often entertained the idea that it would facilitate difficult diagnoses if it were possible to identify by certain anatomic factors, certain classes of people especially predisposed to these diseases.

I naturally asked myself: "Can human beings be classified according to their anatomical make-up?"

The answering of this question necessitated a careful perusal of the literature on the subject and I was surprised at the meagre information obtained thereby. It naturally led me to the study of the temperaments, a subject nowadays assigned to pseudoscientific literature, even tho medicine has nothing to take its place and every one realizes that there exists an enormous difference in individual constitutions.

It seems that the dentists of today are the only ones who realize that a study of the temperaments is of practical importance altho they are still using the older classifications. Turner¹ states: "As a general rule the size of the teeth bear a certain ratio to the size and shape of the body, and more especially to the head and face, but this is

by no means fixed and varies greatly within the limits of the normal. Teeth of different individuals differ not only in size and mensural proportions but they differ in their relation to the bodily dimensions. It is a general rule however, that meets with few exceptions, that their forms and contours are harmonious with those of the body. There is also a general relation between the color of the teeth and that of other pigmented tissues of the body. Despite the antiquity of this classification (temperaments) it is commonly utilized in dental prosthesis at the present time for lack of a better. Essig⁷ makes similar statements.

A. The Temperaments.—

HISTORY.—Hippocrates, the father of medicine, was undoubtedly the first one to see the necessity of such a classification and he mentions four temperaments depending on the four primary constituents of the body, blood, phlegm, yellow and black bile, *sanguine*, *phlegmatic*, *choleric* and *melancholic* or *atrabilious*. He describes the sanguine temperament as having more flesh than proper, being hairy and hot to the touch and as being liable to putrid disorders. The phlegmatic as gross, fat, lax with soft white skin, not abundant hair, invisible veins weak muscles and limbs, spiritless, inactive and of a timid character. The choleric as having dark hair, large prominent vessels, a dark skin and a muscular and well articulated body. The atrabilious as possessing a hard slender white body, fine muscles, small joints, little hair and as being timid and desponding.

It seems that this classification was much discussed but not changed until Stahl made the attempt to adapt it to modern human pathology. Boerhave increased the number from four to eight but he thought them to

be modifications of the four old ones. Dr. Gregory added a fifth one but it was found later on to be a pathologic one. Richerand, a French physiologist, in his "Elemens de Physiologie," speaks of the melancholic and nervous temperaments as pathologic temperaments. Later Spurzheim described the lymphatic temperament as having a pale white skin, fair hair, a round form, soft flesh, a languid vital action, a feeble pulse and as being marked by slowness and weakness of vegetative, affective and intellectual functions. The nervous temperament as possessing fine thin hair, delicate health, small muscles, general emaciation and as being marked by great nervous sensibility and vivacity of sensations. The sanguine temperament as having sufficient flesh, moderate plumpness of parts, light hair, great activity of the arterial system, a strong full and frequent pulse, an animated countenance, as being easily affected by external impressions and as having greater energy than the lymphatic temperament. The bilious temperament as having black hair, a dark yellow or brown skin, firm muscles, harshly expressed forms, a great general activity and functional energy and as having a strongly marked and decided expression of countenance.

It remained for Alexander Walker, a lecturer on anatomy and physiology at Edinburgh about a century ago to state that the old classification of temperaments was undoubtedly correct from a pathological standpoint, but that the delineation of vital strength and of character in order to stand on solid footing must be based upon an anatomical classification. He therefore described three main temperaments, the motive, depending on the predominance of the motor or mechanical system, the vital, on

the predominance of the vital or nutritive system and the mental marked by the preponderance of the mental or nervous system.

In 1904 Dr. Jaques' described the temperaments as given by Walker extensively and added his own observations. I must admit that the older classifications which appeared before Walker's time were not of much use to me, but that the temperaments as described by the latter and as quoted and studied in detail by Jaques have a practical importance which will be plain to every one who has given the subject a moment's thought and has observed for himself.

I do not intend to convey the idea that I take all the supposed facts given by the last two authors mentioned for granted, but I must say that the description of the tempera-

cording to the general attributes of his body and those especially to the parts which compose it."

Definition.—We may define the term temperament as signifying a constitutional development brought about by the admixture in different proportions of the different constituents of the body, the predominating one determining the temper or temperament.

In Lower Animals.—If we inspect for a moment some of the wild lower animals we readily notice differences between them. The carnivorous animals seem to be mainly motive in character whereas the herbivorous animals seem to be mainly vital. The delicate antelope and the well formed deer show well marked characteristics of the mental temperament.

Motive temperament	{ Carnivorous animals (Admixture of bilious.) Birds of prey. Swift flying birds. Insect eating birds.	
Vital temperament.	{ Woodchuck. Beaver (Partly motive.) Bear. Grouse. Quail. Wild pigeon. }	} Seed eaters. } Herbivorous animals.
Mental temperament.	{ Deer. Antelope.	

ments as given by them has at least a practical bearing and has enabled me to form a conception of "the individual constitution." That I am correct in my observation as to the practical importance of temperaments is readily seen by inspecting DeGiovanni's work. He states: "It is necessary to confess however, that the old doctrine of constitutions and temperaments is not to be allowed to fall into oblivion at least in its fundamental idea, since it expresses the necessity of qualifying the individual ac-

From the above outline it seems that there is a much greater degree of uniformity among the temperaments of wild animals than among those under domestication, as the latter seem mixed to a much greater extent, undoubtedly as the result of the artificial conditions under which they live, diet, breeding and training being some of the most important factors. The dog is possibly the most mixed of them all.

In Human Beings.—Similar conditions seem to prevail among human beings as

there exists a greater uniformity of temperaments among the savage races than among the civilized people.

In the following outline I will describe the three primal temperaments with their characteristics and peculiarities, all three of which are present to a greater or lesser degree in each human being, the predominating one determining the temperament.

1. The Motive Temperament.

Definition.

A particular state of the bodily constitution in which the proportion of bones, muscles and ligaments compared with the rest of the body is relatively great, giving corresponding rise to great strength and endurance.

Etiology.

Predisposing causes.

Individual.

1. Race.—Americans, Danes, Swedes, Norwegians, Irish (of north), Highland Scotch (of Norse origin.)
2. Sex.—Male.
3. Heredity.—Mostly. But can be produced artificially.
4. Occupation.—That which tends to produce bones and muscles. Responsibility, authority, control, execution.
5. Diet.—Meat of quadrupeds. Unbolted wheat. Substances containing bone building material as phosphate of lime, etc.

Surroundings.—Habitation. Rocky, hilly regions.

Season and Climate.—Dry, stimulating, pure atmosphere.

Exciting causes.

Energy of the body required to build up bones and muscles mainly.

Description.—

Identification.—Tall striking bony figure, with sharply cut features and oval face. Two types: *Melanchomous* and *Xanthous*.

Height.—Tall.

Figure.—Angular.

Head.—Shape.—Parietal region enlarged at the expense of the fore and backhead.

Forehead.—Sloping backward and retreating. Internal part of the superciliary ridges well marked.

Hair.—Two varieties.—Dark (*Melanchomous* type.) Dark strong abundant. Light.—(*Xanthous* type.) Light, red, sandy.

Face.—Oblong. Sharply cut angular features.

Complexion.—Of Melanchomous type.—Swarthy.

Of Xanthous Type.—Florid.

Eyes.—Of Melanchomous Type.—Black or brown.

Of Xanthous Type.—Blue, gray or hazel.

Nose.—Strongly marked.

Lips.—Thin elongated, mostly firmly pressed together.

Mandible.—Massive, frequently square. Differs according to admixture of the other temperaments.

Malar Bones.—Relatively high.

Teeth.—

Color.—Strong bronze yellow.

Size.—Large and strong. Molars have short and heavy crowns but large and heavy roots.

Texture.—Dense and hard.

Enamel.—Rough and strong. Often transverse lines.

Cusps and Edges.—Square and heavy.

Arrangement.—Close set and regular.

Articulation.—Firm. Close and well locked.

Arch.—Large, square with prominent canines.

Vault.—High and square.

Gums.—Orange red, dense. Margins heavy.

Rugae.—Heavy, square and rugged.

Voice.—Mostly base or baritone.

Expression of Face.—Striking.

Grave, earnest, determined or severe and stern.

Neck.—Rather long.

Shoulders.—Broad.

Upper Extremities.—Long. Joints well marked.

Hands.—Long, bony. Joints of fingers frequently enlarged.

Nails.—Elongated and strong.

Thorax.—Well filled.

Abdomen.—Proportional. Heavy muscles.

Lower Extremities.—Long. Muscular. Prominent joints.

Feet.—Relatively small on account of high instep, but mostly larger than those of the other temperaments.

Pose of Body and Movements.—Strong, angular, sure.

Walk.—Expresses firmness.

Handshake.—Hearty grip, with full hand. Powerful grasp.

Pulse.—Slow and full.

Mentality.—

Predominating mental characteristics.

1. Self-esteem.
2. Self-reliance.
3. Pride.
4. Love of power.
5. Firmness.
6. Persistence.
7. Combateness.
8. Executive ability.
9. More conscientious than benevolent.
10. Alimentiveness and amateness smaller than in vital temperaments.

Character.—Strongly marked. Great works, errors, faults or crimes. Coarseness of fibres of bodily organs. Coarseness of feelings, better observers than thinkers. Execute better than plan. Talk to the point. Hit the nail on the head. Constant in friendship or hatred.

Pathology.—

1. The Athletic Type.—

Abnormal development of the osseous and muscular systems at the expense of the nervous system and viscera. Nothing but mere animal strength. Enormously developed bones and muscles. Low mentality. Head small. Forehead low. Large parietal and Rolandic regions.

2. Diseases of the stomach.

3. Pneumonia. On account of recklessness in exposure to heat and cold.

4. Rheumatism.

Treatment. (Of athletic type).

1. Prescribe a vegetarian diet in regulated quantities. (Caloric value required).
2. Carefully regulated out of door exercise.
3. Prescribe stimulation if necessary.
4. Mental culture must be forced in order to make mental activity take the place of the natural tendency to physical exertion.
5. Schoolwork should be started at least at the sixth year.
6. Make use of everything which will assist in changing them to a motive-mental or motive-vital temperament and ordinarily your efforts will be crowned with success in a few years.

2. The Vital Temperament.—

Definition.—

A particular state of the bodily constitution, in which the proportion of viscera to the rest of the body is relatively great, giving rise to great vital energy and vigor.

Etiology.—

Predisposing causes.

Individual.

1. Race.—Celtic nations (dark type) bilious temperament. Teutonic nations (Light type.) Sanguine temperament.
2. Sex.—Female. (Not Americans.)
3. Age.—Children should always be of this temperament.
4. Heredity.—Frequently. But can be produced artificially.
5. Occupation.—Traveling man. Politician. Minister. No sedentary employment. Plenty of outdoor exercise.
6. Diet.—Nutritious. Beef, mutton, fish, fresh eggs, graham bread. oatmeal, rice, tapioca, corn meal. Avoid strong acids and watery vegetables.

Surroundings.—

Habitation.—Level ground.

Season and Climate.—Moist. Temperature which renders pleasant and encourages a large amount of outdoor exercise.

Exciting Causes.—Energy of the body required to build up glands, vessels, lymphatics. (Viscera.)

Description.—

Identification.—Tall rounded figure with round head and face and frequently a considerable quantity of adipose tissue. Two types: *Bilious* and *sanguine*.

Height.—Tall, but proportionally less than the motive temperament. Breadth and thickness of body proportionally greater than in the motive temperament.

Figure.—Round.

Head.—

Shape.—Round. Broad base of skull and of brain.

Of Forehead.—Bulging forward. Internal parts of superciliary ridges well marked.

Hair.—Of bilious type.—Black or dark brown. Of Sanguine Type.—Flaxen yellow or auburn.

Face.—Round.

Complexion.—Of Bilious Type.—Swarthy, olive brown, copper colored, yellow or black. Of Sanguine Type.—Rosy.

Eye.—Of Bilious Type.—Varying from black to hazel or gray. Of Sanguine Type.—Blue.

Nose.—Soft, small. Wide nostrils.

Lips.—Quite large.

Mandible.—Broad but pointed.

Malar Bones.—Comparatively. far apart.

Teeth.—Color varies from pallid opaque to muddy or yellow. Short, round and well set. Brittle and chalky.

Voice.—Male.—Baritone or tenor. Female.—Mezzo soprano. Mostly powerful, heavy, expressed with force.

Expression of face.—Lively, frank, good natured.

Neck.—Short and thick (comparatively.)

Shoulders.—Round and broad.

Upper Extremities.—Tapering. Size proportionally less than in motive temperament. Far apart.

Hand.—Small, short thick.

Fingers.—Tapering. Joints not prominent.

Nails.—Rounded.

Thorax.—Large expansion.

Abdomen.—Large, thick layer of *paniculus adiposus*.

Lower Extremities.—Tapering. Joints not prominent.

Feet.—Small for size of body.

Toes.—Very symmetrical.

Pose of Body and Movements.—

Natural, easy, graceful, dignified.

Walk.—Quick. Short steps. Expresses lack of mental depth.

Handshake.—Soft warm hearty. Can not always be trusted as to friendship it represents, because the mind is superficial.

Pulse.—Full and strong. Quicker than in motive temperament.

Mentality.—Predominating mental characteristics.

1. Alimentiveness.
2. Acquisitiveness.
3. Amativeness.
4. Benevolence.
5. Mirthfulness.
6. Language.
7. Perception.

Character.—Passionate. May be violent but are as easily calmed as excited. Mental processes quick, impulsive, enthusiastic, elastic. More brilliancy than depth. Love play better than hard work. Must ever be doing something to work off their constantly accumulating stock of vitality.

Pathology.—

1. The Lymphatic Type.—
Outlines of the body even softer and rounder than of vital temperament. Lacks graceful outlines. Abnormal preponderance of the viscera. Sluggish action of circulation. General apathy of body and mind. Light gray color of skin. Lack of expression in face. Corresponds to lymphatism or status lymphaticus, a general hyperplasia of many lymphoid tissues, (tonsils,

adenoids, etc.) Have a low resistance and bear anesthetics badly. (5), (6), (7).

2. Lack of moral sentiments.—Liable to over eating and drinking, frivolity and dissipation, consequently plethoric conditions, congestions, apoplexy, etc.
3. Specially liable to become addicted to stimulants.

Treatment. (Of lymphatic type.)

1. Avoid living in low moist marshy districts pervaded by malaria.
2. Fresh air, sunshine and out of doors.
3. Avoid milk and cereal diet, give meats (proteids) instead.
4. Avoid emotional disturbances.
5. Prevent mental idleness, indifference and weariness by cultivating health and physical development.
6. Prescribe active exertion in order to overcome the strong tendency to idleness and repose.
7. Avoid hydrotherapeutic measures, and over exertion.

3. The Mental Temperament.—

Definition.—

A particular state of the bodily constitution in which the proportion of the central and sympathetic nervous systems compared with the rest of the body is relatively great, giving corresponding rise to a delicately chiseled body and a mentality characterized especially by an acuteness of the senses and intensity of emotions.

Etiology.—

Predisposing causes.—

Individual.—

1. Race.—Caucasian. Very rare among barbarous tribes and savages.
2. Sex.—Female.
3. Heredity.—Frequently. It may be developed in a constitution in which it originally held second place.
4. Occupation. — Employments calling into full activity the in-

tellectual faculties, especially those most concerned in tracing connection between cause and effect and in analytical and synthetic processes.

5. Diet.—Fish, flesh of poultry and game. Nuts and milk.

Surroundings.—

Habitation.—Cities.

Season and Climate.—Medium.

Social.—Refining influences.

Exciting Causes.—Energy of body required to build up central and sympathetic nervous systems.

Description.—

Identification.—Preponderance of the nervous systems. Delicate and finely chiseled body. Comparatively slight frame and large head.

Height.—Medium or small.

Figure.—Delicate, graceful, elegant.

Head.—Relatively large.

Shape.—Uneven. Superciliary ridges smooth in outline.

Forehead.—High, pale.

Hair.—Soft, fine and light, but not abundant.

Face.—Conical, pyriform, delicately cut. Sharp features.

Complexion.—Soft, delicate, pale.

Eye.—Gray or hazel, bright, expressive.

Nose.—Pointed, nicely molded, thin.

Lips.—Thin.

Mandible.—Light, pointed.

Malar Bones.—Not prominent.

Teeth.—Bluish, sharp, liable to early decay.

Voice.—High, shrill or soft and flexible.

Expression of Face.—Intelligent speaking countenance.

Neck.—Thin, long slender.

Shoulders.—Set forward, brought near together. Stooping.

Upper Extremities.—Slender.

Hand.—Small and slender.

Nail.—Delicate, elongated.

Thorax.—Small, narrow.

Abdomen.—Small.

Lower Extremities.—Slender.

Feet.—Small, slender, delicately formed.

Pose of Body and Movements.—Tense and quick movements.

Walk.—Light and quick.

Handshake.—Friendly. Avoids getting soiled.

Pulse.—Quick.

Mentality. — (Predominating mental characteristics.)

1. Causality.
2. Comparison.
3. Spirituality.
4. Veneration.
5. Moral sentiments.

Character.—Quick and clear conceptions. Intense emotions. Refined feelings and taste. Vivid imagination.

Pathology.—

1. The Hysteric Type.—
Corresponds to an extremely pure condition of the mental temperament, which is especially liable to nervous disorders.
2. Mental overwork.
3. Insanity.
4. Greatest danger is lack of physical exercise.
5. May not have enough physical strength to back up their mental energy.

Treatment. (Of hysterical type.)

1. All exciting prenatal influences must be avoided.
2. Prescribe an out-of-door life.
3. Keep children out of school at least until the eighth year, and never under any circumstances permit their memory to be forced by the present system of education. The development of their special senses and the growth of their association bundles should be watched carefully, just as a gardener watches and guards the development of a tender plant.
4. Total abstinence from stimulants of any kind.
5. Avoidance of the excitements of society, dances, and hilarious sports.
6. Must lead a quiet life.

4. The Compound Temperaments.—

By stating that a temperament is motive, vital or mental, I mean to convey the idea that under ordinary conditions all three temperaments are present in each human being, but that the one designated predominates.

Whenever one of these three temperaments is present to such a degree as to be

practically pure, then we must look upon this condition as an abnormal one, which if not counteracted will sooner or later give rise to the corresponding pathological temperament.

It happens frequently that two out of the three temperaments are well marked and then we speak of a compound temperament, the one predominating being named first. The following six compound temperaments are comparatively easily recognized:

1. Motive-vital.
2. Motive-mental.
3. Vital-motive.
4. Vital-mental.
5. Mental-motive.
6. Mental-vital.

The identification of these is not difficult if one is familiar with the physical and mental characteristics of the three primal temperaments, and it stands to reason that in these cases, these characteristics are mixed according to the predominating temperaments present.

B. Changes of Temperaments.—1. Natural change.—

Children are mostly of the vital temperament but it frequently happens that their real temperament which under ordinary conditions should not crop out until the rapid period of growth asserts itself in youth, is exhibited much earlier, in fact too early and parents would do well to counteract such early manifestations of the temperamentum vera by regulating the diet, work, etc., as suggested in this paper.

Early schooling is especially disastrous as far as its effect upon the nervous system is concerned in too early developed mental temperaments. These children are bright and their parents are proud of their mental achievements, but chorea minor, neurasthenia and frequently hysterical manifestations are the result.

A mechanic can not place the intricate parts of a delicate piece of machinery until the framework is finished and so it is with children as a rule, their brain does not reach the right size until the eighth year and the development of the senses and the building of the intricate pathways of association should not be forced. The memory work which the present school system forces upon the mind of the youngsters can not be anything but harmful, and it surely is a waste

of time as far as the pupils are concerned. Machine made mentalities of today at the time they are turned out are like automatic machines with a deranged mechanism, they know a lot but can not think of it when needed and correspondingly the development of their association bundles has been retarded instead of augmented.

Adults revert as a rule to the vital temperament at the age of: Females 40—45. Males: 60—65, about the time of the climacterium.⁸

2. *Artificial change:*—

Each of the following factors has a profound influence upon the development of the temperaments and changes from one temperament to another or the balancing of the three temperaments can be brought about within a few years if all of these factors are brought to bear under competent management.

Diet.—Change diet to the one of the desired temperament.

Occupation.—Changing sedentary habits to outdoor work and habits of reflection to outdoor recreation assists in changing a mental to a motive temperament, etc.

Habits.—Exclusion of stimulants and the regulation of studious habits assist in changing a mental into a motive temperament, etc.

Habitation and Climate.—Mountain races have stony granitelike features and habitat in mountainous regions in a cold or moderate climate will assist in changing a mental to a motive temperament.

C. *Temperamental Differences of the Skull and Brain.*—

In a paper of this character it would lead me too far, if I attempted a detailed description of gross anatomical differences which do exist between the skulls and brains of the different temperaments and I therefore will limit my remarks to some gross facts easily verified.

Skulls of the Motive Temperament.—

They present mostly a cephalic index below 80 and are most frequently mesaticephalic. The large bulging parietal regions seem to be developed at the expense of the upper parts of the fore and backhead. Thick skulls and coarse bones are the rule and a large amount of diploe can be expected. The in-

ternal extremities of the superciliary ridges are rough. The mandible is mostly massive and square.⁹ The air sinuses are comparatively small and the sinus frontalis is absent in 20% of all cases. Skulls of this temperament make fine specimens for osteological study and if boiled, cleaned with gasoline and sun bleached will present a yellow appearance. Entire skeletons prepared by this method are the best to be had and are never brittle like those of the vital temperament. (I do not mean the ones sold by different firms, bleached and made brittle by chemicals).

Skulls of the Vital Temperament.—

Skulls of this temperament, prepared as above, are white and very brittle. The entire skeletons are poorly marked and can not stand much rough handling. In this temperament we have mostly a cephalic index above 80 and the skulls are distinctly brachycephalic. All the indices are high. Thin brittle skulls with a small amount of diploe and large air sinuses are the rule. While the internal extremities of the superciliary ridges are never rough, there frequently is an enormous breadth between the orbits and the entire inferior region of the forehead between the external angular processes of the frontal bones may be nicely rounded so as to present a convexity forward, without the slightest elevation indicating the location of the superciliary ridges.¹⁰ The sinus frontalis is never absent and it reaches an enormous size in some specimens of this type. The base of the skull seems to be developed enormously and the temporal regions are bulging to correspond. The forehead is mostly well rounded and rarely presents well marked angles.

Skulls of the Mental Temperament.—

They present mostly a cephalic index from 80 down and seem to be inclined to longheadedness (dolichocephalic) altho mesaticephalics are very common among them. These skulls are strong, hard but delicate, of medium thickness with diploe sparingly represented altho of very fine texture. The superciliary ridges are generally plainly visible and present a nice and even contour. The air sinuses are of medium size (about as given by textbooks) and the sinus frontalis is never absent. The upper part of the fore and backhead seems to be developed at the expense of the base and sides of the skull.

Brains of the Motive Temperament.—

Exhibit mostly coarse and well marked gyri and a well marked and defined Rolandic area. The fibre bundles are also coarse and in properly prepared specimens can be dissected with ease. For a beginner in fibre dissection this kind of material should be selected at first.

Brains of the Vital Temperament.—

Can be recognized at once by their round contour and peculiar quality. The gyri formation is that of the shortheaded brain (brachiocephalic).¹¹ A large cerebellum and a well marked wide base of the brain with short temporal lobes is the rule. Fibre dissection of this kind of material is very difficult for beginners and should not be attempted until my technique is thoroly mastered.¹² Fibres in these specimens seem to be poorly developed and glued together to such an extent that stripping is difficult. For research fibre dissections the brain of this temperament is not very suitable.

Brains of the Mental Temperament.—

Exhibit frequently the gyri type of the longheaded brain (dolichocephalic), and coarse gyri as found in the motive temperament are rare except in certain parts. Everything seems to be delicately molded and during fibre dissection we encounter in these cases bundles which are well marked, strip or tease easily but are very delicate. This type of brain is extremely well suited for research fibre dissections.

If any one will select three brains according to the temperaments described in this paper, prepare them according to my method and simply break one hemisphere of each, he will readily appreciate the difference in the quality of the fibres.

PRACTICAL IMPORTANCE OF TEMPERAMENTS.

1. *Facilitates Recognition of Individual Constitutions.*—I must admit that in the study of temperaments numerous difficulties are encountered due to the law of individual variation, but the recognition, study and description of certain classes of constitutions is greatly facilitated. It opens the door to an enormous amount of future research work in all the different departments of medicine and surgery as it represents not new but altered fundamental facts, based upon observation of definite anatomical findings.

After having studied temperaments, one

becomes so proficient in recognizing them, that frequently the hearing of a voice (not pathologically changed) or the inspection of an old hat, glove or shoe is sufficient to identify the owner as belonging to a certain temperament. The close examination of any part of the body, one finger or even finger nail is amply sufficient to identify the temperament but of course in the case of compound temperament this is more difficult, but even in those cases, a peculiar pattern seems to have been used for the molding of all parts of the body, distinctly characteristic for these compounds, truly a noteworthy example of the law of homogeneousness which holds that "Every part of a thing shall correspond with every other part and with the whole."

2. *In Study of the Brain.*—As Gray states "To define the real degree of development of the brain it is necessary to have a knowledge of the condition of the whole body and as this is usually lacking, the mere record of weight possesses little significance."

As said before distinctly recognizable temperamental differences can mostly be demonstrated on the individual brain and from them it is not difficult to deduct the temperament of the individual. In this manner I obtain an idea of the entire body of an individual from an unknown brain.¹² Of course a crude conception of the biological manifestations of an individual can not take the place of a close inspection when this is possible, as it is a fact that in addition to anatomy, the manner of functioning also reveals anatomical conditions of the organs. Excess and defect of excitability and greater or lesser functional resistance indicate different and in proportion to the defect, abnormal morphological conditions.

3. *In Delineation of Character.*—Just as each temperament is marked by the predominance of certain physical characteristics, subject to variations belonging to the individual constitution, so we find that in connection with the mind, each temperament is marked by the predominance of certain mental characteristics, subject to variations belonging to the individual mentality. Therefore in the delineation of character it is absolutely necessary to commence the analysis with the identification of the temperament to which the individual belongs.

This paper was written mainly for the

purpose of presenting those fundamentals necessary for identification of temperaments in an easily understood manner. It paves the way for the more difficult detailed individual examination which necessarily includes all truths of the much scoffed at pseudoscientific subjects of phrenology and physiognomy, in addition to a close study of the individual constitution and if possible an inquiry into all the biological manifestations of the individual.¹³ A comprehensive idea of atavistic phenomena occurring in connection with the mind is difficult to obtain if one has not inspected physical findings caused by reversion to type much lower in the scale of evolution and these in turn are not comprehensible if one does not understand the normal anatomical variations and according to my ideas and findings the identification of the latter necessarily presupposes an understanding of the temperaments.

4. *In Study of Criminals.*—If temperamental studies were put in practice in connection with our present criminals, we would be surprised indeed at the enormous amount of good material, which has been abused, degraded and changed by the social conditions of today, for which the possessors of this material are not responsible; material which undoubtedly can readily be reclaimed if studied in detail and rightly understood. I believe it is plain that temperamental identification would constitute the first step in the right direction toward a proper understanding.¹⁴

5. *In Estimating Individual Resistance.*—Since we can recognize groups of constitutions, it is natural to suppose that by their peculiar anatomical make-up they are predisposed to certain mechanical defects and among savages where temperamental conditions are more uniform (scarcity of compound temperaments) we might possibly say "predisposed by their peculiar anatomical make-up to certain diseases (infections)."

It seems to me that the power of resistance differs in the different temperaments according to their predisposition and so I find that the motive temperament being predisposed to fractures, dislocations and bone affections can withstand these better than the other temperaments. The mental temperament being predisposed to nervous diseases can withstand these best and the vital

temperament being prone to visceral disturbances is correspondingly most resistant to those.

The dosage of medicines should be regulated in the first place according to the temperament which predominates as it is plain, that p. e. a vital temperament can stand more stimulation than a mental temperament with its highly sensitive nervous system.

In connection with surgical cases it is of the utmost importance to diagnose the temperament correctly before the individual constitution is studied in detail, as it is only in this manner that we can displace guesswork (more luck than wisdom) with scientific facts, and arrive at a definite understanding as to the individual's resistance. I do not claim that the study of temperaments will tell definitely that a certain case can stand a certain operation, or will be capable of coping successfully with certain bacterial invasions, but I do claim that it is one of the corner-stones of the diagnosis of resistance.

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Conducted under the Editorial Direction of Dr. J. W. Wainwright

The Intravenous Treatment of Gonorrhea.—In the *Medical Record* for April 28, 1917 appears a paper on the intravenous and intraprostatic injections of methyl-phenol and normal phenol serum in gonorrhea. This paper was read before the American Urological Association at its annual meeting in Chicago, Ill., April 2, 3 and 4, 1917 and was written by Dr. F. Guillermo Cano, San Salvador, C. A., Professor of Genito-Urinary Diseases in the Medical School of San Salvador, and Drs. Terry M. Townsend and Julius J. Valentine of New York.

Dr. Cano was the originator of the above treatment and four years of clinical experience with the method enables him to summarize as follows:

(1) The treatment of gonorrhea by intravenous injections of the methyl-phenol serum until the disease reaches its declining stages prevents complications.

(2) Pain, discomfort, and other subjective symptoms usually disappear after the fourth or fifth injection, and definite clinical and bacteriological cures are effected in from thirty to forty days.

(3) Ten injections are usually sufficient when the infection is attacked at its onset.

(4) Gonorrhea, when complicated by primary or secondary syphilis, successfully responds to the treatment if additional anti-syphilitic medication is employed.

(5) Local complications, such as epididymitis, buboes, abscesses, etc., together with systematic manifestations such as toxemia and the paragonococcal lesions (arthritides), disappear more rapidly with this form of treatment than any other, and surgical interference is rarely necessary.

(6) By the use of intravenous and intraprostatic injections of the serum, months,

not years are required to cure residual prostatic gonorrhea and its numerous recrudescences.

The action of phenol is beneficial in such combinations because its direct action is modified or attenuated. It acts indirectly on the elemental anatomical cells, on the blood globules, and on the soluble or insoluble normal organized ferments.

The presence of methylene blue in this product is of extreme importance. This substance acts as a protector to prevent the phenol from exerting its direct action on the red blood corpuscles. It has a refractory chemicobiological action, and exercises no vicious effect on the red blood corpuscles in the circulation, but, on the contrary, by its inoffensive presence, it wholly preserves all of the physiological properties of the blood. Even in saturation this substance has no detrimental effect on the cellular elements of the blood as proved by animal experimentation which shows rapid elimination thru healthy kidneys. Therefore, methylene blue possesses the double value of preserving the antiseptic powers of phenol and of preventing its direct action on the chemicobiological function of the red and white blood cells.

The mode of action of methyl-phenol serum on the gonococcus and its toxine is threefold: First, locally at the site of the injection; second, in the blood stream and third, during its elimination. It possesses three indispensable requirements: *First*, it does not attack the red blood corpuscle; *second*, it preserves its antiseptic and germicidal and antitoxic action at the site of infection and in the blood stream, and at the time of its elimination; *third*, it produces no ill effects in the body.

The contraindications to the intravenous and intraprostatic injections are (1) Advanced nephritis; (2) extensive organic car-

diac lesions and (3) autointoxications. But these maladies must be present in a pronounced degree to constitute contraindications.

The use of methyl-phenol serum in continued gonorrheal and syphilitic infection does not give brilliant results unless the syphilis is controlled by appropriate treatment; then the usual beneficial results of serum injections become apparent.

Dr. Cano has employed this form of medication in more than three thousand private and hospital cases, while Drs. Townsend and Valentine have administered between six and seven hundred intravenous injections of methyl-phenol serum and sixty-seven intraprostatic injections of normal phenol serum in seventy-three selected private and hospital patients.

The conclusions arrived at by the authors of the paper are as follows:

(1) Methyl-phenol serum may be repeatedly injected intravenously in doses of 10 c.c. into adults at intervals of forty-eight hours without danger or detriment to life or health.

(2) Its use has a tendency to prevent complications by killing or rendering inert the invading gonococcus at the site of residence.

(3) For the same reason and because of the neutralization of gonotoxine it shortens the course of gonorrhea and alters a vicious into a benign infection.

(4) Its use causes general increased economic resistance, hence gonorrheal sequelae are rare.

(5) Intraprostatic injections of normal phenol serum are harmless when correctly performed, frequently cause a rapid disappearance of gonococci from the prostatic secretion and invariably shorten the time required to cure gonorrheal prostatitis.

(6) The treatment of gonorrhea by Cano's theory of intravenous injections of methyl-phenol serum and intraprostatic injections of normal phenol serum is firmly based upon chemicobiological facts and accepted authoritative theories and bears the same relation to gonorrheal that intravenous injections of arsenicals bear to syphilis.

(7) This is the first application of the immutable laws of chemicobiology to gonorrheal infection which application forms the basis for a scientific and uniform treatment of gonorrhea.

Apocodeine.—Alvarez, (*California State Journal of Medicine* for September, 1916) contributes an article on the use of this product in the treatment of constipation. In suitable cases he gives 1/10 to 1/15 grain of apocodeine hydrochloride combined with atropine sulphate 1/150 to 1/200 grain in capsules; one such capsule two or three times a day. This treatment he declares will insure a normal formed stool without discomfort. He encountered in three years' use of this treatment but three cases in which satisfactory results did not follow. These were in individuals particularly sensitive to drugs and to nervous influences. In these, however, there ensued a mildly laxative effect. When the drug works satisfactorily there is no necessity of increasing the dose after continued use. Many of his patients have used it for three years with continuous good results from 1/15 grain twice daily. Many also have been able to discontinue its use by gradual reduction in frequency of use.

Phenolcamphor as an Antiseptic in the Treatment of Wounds.—Feldrican and Walton, (*Lancet*, London, December 23, 1916) relate their experiences in the treatment of septic military wounds with phenolcamphor, equal parts by weight. Preliminary to the application of this mixture, a liquid by the way, they secure the desired drainage by a free opening of all penetrating wounds and the careful removal of foreign bodies as well as of dead tissue. It will be well to protect the surrounding skin in some manner before applying the antiseptic. When the wound is made clean, the phenolcamphor is poured into it and made to come into contact with all surfaces; drainage is secured by tubes packed around with gauze soaked in the phenolcamphor. Dry gauze is then applied. This dressing need not be changed oftener than once in forty-eight hours in most cases, the wound remaining clean. Phenolcamphor dries the surface of the wound. It should not be used with other methods which bring fluids into the wound, the drying of the wound being an important part of the treatment. Sloughs separate in from three to seven days, leaving a healthy, dry granulating surface which rapidly heals. The application of the phenol-

camphor should be discontinued as soon as the sloughs begin to separate. All redness and local swelling disappear in one to two days and the temperature remains normal. No evidences of phenol poisoning were observed in the large number of cases thus treated. This method of treatment secures anesthesia after the first application following a few moments of burning pain at first. The wound is made aseptic more rapidly than with any other antiseptic, is not followed by secondary hemorrhage or injury to nerves.

Blood Transfusion.—Unger (*Canadian Practitioner and Review*, October, 1916), writes that there are two methods in use in blood transfusion: that which utilizes unmodified whole blood and blood altered by the use of anticoagulants such as sodium citrate. He declares that the latter has the advantage of providing blood which can be stored for use in emergencies or transported from place to place if desired. This, however, has two disadvantages: first, the alteration of the coagulation period of the recipient's blood, and second, the danger of causing high temperature and chills. The first method is free from the objections of the second and when performed with the apparatus devised by the author requires no special skill. In a series of eighty-five transfusions no chills followed and but eight cases showed elevation of temperature. In sixty-one per cent. of the cases there was improvement or clinical cure and he regards the transfusion life saving in twenty-two per cent. of his cases. There were cases of postoperative hemorrhage, hemorrhage in newborn, intraabdominal bleeding, duodenal ulcers, and ectopic gestation sacs.

Diabetes Mellitus in Japan.—According to various contemporary authorities, says an editorial writer in the *Medical Record*, diabetes runs a mild course in Japan and seldom leads to coma. Polyuria is absent thruout, and with it the symptoms which announce the onset of the disease. This behavior is the more singular because of the preeminently carbohydrate diet of those people. Where the disease is most severe, on the other hand, the people are meat-eaters. Le Goff, whose researches into

this subject were recently presented before the French Academy of Sciences (*Gazette hebdom. des sciences médicales de Bordeaux*, July 8) tested both healthy and diabetic Japanese for carbohydrate tolerance and found a better utilization of sugar in comparison with other races. It is not made clear to the reader why the benign diabetes of the Japanese cannot straightway be termed a glycosuria.

Radium in Hypertrichosis.—Heidingsfeld (*Lancet-Clinic*, Sept. 23, 1916) reports a case of extreme hypertrichosis in which, at three points over which radium was applied, the hair was completely and apparently permanently removed. Most of a heavy growth of hair over the neck and chin, nearly as marked as in an adult male had been eradicated. The radium application is painless, rapid and effective, while the cosmetics result is far better result than that secured with the needle and galvanic current.

Hexamethylenetetramine in Postoperative Treatment of Gall-bladder Surgery.—Rhodes, in *Surgery, Gynecology and Obstetrics*, October, 1916, declares that during the first few days following operation hexamethylenetetramine should be given by proctoclysis because the patient is not allowed fluid by mouth in order to avoid upsetting the stomach. After the first week it can be given by mouth. The agent is given five days each week. Omitted for two days to obviate untoward symptoms; however, the drug is omitted for a day or two and resumed should these develop.

Galyl in Syphilis.—Bates, after using 55 doses of Galyl, concludes (*Can. Jour. of Med. and Surg.*) that: 1, clinical symptoms clear up rapidly; 2, the Wassermann reactions become negative as a rule in approximately the same time as with salvarsan or neosalvarsan; 3, that there is little reaction. Three cases showed nausea and in several cases there was a slight rise of temperature immediately after the treatment; 4, there is no evidence of thrombosis in veins following treatment.



Some Organotherapeutic Mistakes We Have Met.—Not every physician who essays to use the numerous and increasing forms of organotherapy does so with one hundred per cent. results. The subject is not so extremely simple that the novice can take it up, follow the rules (usually given by the manufacturers) and never fail!

As a matter of fact experience makes the application of organotherapy much more effective, just as time enables the physician to acquire skill in the use of all forms of treatment. Undoubtedly there is a "knack" in using organotherapy to the best advantage, and while suggestions and warnings can be given in writing, it is difficult to obtain ideal results without many trials. Even the use of pituitrin in obstetrics, at first thought to be an extraordinarily simple procedure, is being radically modified by time and usage; the present dosage is much smaller than at first and the method of administration involves quite a modification of the original single dose of one or two mils.

Not infrequently we have heard of mistakes with organotherapy which have given the physician a wrong impression of the value of this phase of therapeutics and led to the discarding of a measure which was well worth retaining. It will be recalled that tuberculin was discarded for quite some years merely because it was recommended to be used in improper dosage. Tuberculin is, none the less, the most useful single measure we have in the active treatment of tuberculosis and until we had learned how to use it, its inherent value was covered up, and the good that it might have accomplished was irretrievably lost. The same holds true with organotherapy, and a few of the mistakes we have met will be mentioned here to obviate another state of affairs similar to that which obscured tuberculin for so long.

While it is possible to bring about real harm by the improper use of certain organotherapeutic remedies, fortunately it is almost impossible to do this unwittingly. The unusually active remedies in this class, for instance adrenalin, are put up in such form that danger is minimized. Either the dilution is great or the trade form is of such a character that bad results are unlikely. The use of ready prepared solutions or powder in ampule or tablet form facilitates their successful use.

From the standpoint of the writer there have been many more mistakes of omission than of commission; and it may be that the tendency of some physicians to stand aside and not avail themselves of the increasingly encouraging opportunities which organotherapy is offering to the profession today, is productive of more harm than the indiscriminate use of some of these preparations. At all events, we do not believe that mention of the following experiences will deter any reader of this department from applying themselves to the study and application of this fertile field of therapeutic possibility.

A physician had been given the idea that a certain patient who was suffering from angina pectoris and who evidently had several signs of minor functional hypothyroidism, should be treated with thyroid extract. He therefore gave the patient two grains of desiccated thyroids before meals and at bedtime—eight grains a day—with the result that the patient's symptoms were extremely aggravated and the doctor was decidedly scared. The reason for this was pure carelessness, altho the custom of setting forth the "average dose" of thyroid as five grains contributed to this unfortunate result, for the doctor thought, as many another has done before him, that if five grains was a usual dose it would be safe to give as little as two grains at a time. As a matter of fact such a case might better

have gone without thyroid, for this drug has a very decided influence upon the heart; and if it is ever given in a "heart case" the dose should never be above one quarter of a grain three times a day.

Another mistake has happened several times in the writer's personal experience and while the matter had been mentioned in the literature before this date it is of sufficient importance to be referred to again here. A patient was taking thyroid extract for a certain well defined ailment and the prescription called for "Tabs. Thyroid (B. W. & Co.) gr. v, No. 24." The prescription was renewed at another drug store and within a couple of days the patient was quite ill with clear cut symptoms of thyrotoxicosis. The thyroid was stopped and on investigation it was found that another manufacturer's product had been used to fill the renewal. Now it happens that the B. W. & Co. product is dosed on a basis of *fresh* gland, while the other manufacturers follow the U. S. P. and make each tablet contain so many grains of *desiccated* gland, hence the former is one-fifth as strong as the others for fresh thyroid glands contain approximately 80% water. This has happened more than once and can only be avoided at present by care on the part of those filling the prescriptions.

A young physician recently interested in organotherapy was attempting to treat a case of "neurasthenia" in a woman of 46 years. The sympathetic disturbances obviously were of climacteric origin and corpus luteum was recommended together with certain other adjuvant treatment which seemed to be in order. A five grain tablet of the extract was given three times a day and it was not noted that the five-grain tablet only contain three grains of the extract. About 40 tablets were given over a period of two weeks, and the hot flashes, nervousness and other manifestations were not modified at all; so the medication was discontinued in favor of bromides and "uterine tonics" until some deprecating remarks about luteal therapy in the hands of this practitioner enabled us to assure him (1) that any form of organotherapy in a complex disturbance such as the disorders of the menopause ordinarily must be continued for months, (2) that there is no likelihood of getting uniformly good results from as little as three grains of

corpus luteum three times a day, the dose should be at least twice this save in unusual cases, (3) that in the chemical derangement accompanying the cessation of ovarian activity other glands beside the ovaries are affected and their disabilities should be taken into consideration and treated simultaneously and (4) that while organotherapy is often extremely valuable, it is by no means a panacea in every case.

In the case mentioned above five-grain capsules of corpus luteum, combined with one quarter of a grain of desiccated thyroid were given four times a day and very tangible relief was had within four days; and the treatment was ordered to be continued for at least six weeks.

Another correspondent was at a loss to know what to do for a case of Parkinson's disease which he had been treating with parathyroid gland with no appreciable results. This physician had given 100 small tablets and remarked that he "didn't believe that this method of treatment amounted to much." On being asked how long the disease had been noticed we learned that the man had been growing progressively worse for six years! And a month of treatment with parathyroid gland (by mouth) was enough to convince this physician of the futility of organotherapy in paralysis agitans.

The writer has seen excellent results follow parathyroid therapy of this disease, but the remedy is given preferably by hypodermic injection twice daily and continued for months. Later the number of injections may be reduced and the gland given by mouth, and occasionally gland feeding has held in abeyance the most important of the symptoms—tremor, drooling and incoordination. Parkinson's disease is not easy to treat and if organotherapy is to be given a trial it should be a thoro one.

Too often organotherapy is used indiscriminately. This is especially true of thyroid therapy. A lady who was disturbed (mentally) by a little more avoirdupois than normal previously had been under the care of a country physician who had recommended thyroid tablets. Evidently the dosage had been generous and the doctor had failed to warn the patient of the dangers of the indiscriminate use of thyroid. The result was that the patient found

herself in a highly nervous condition with tachycardia and dyspnea on very slight exertion, and the cause was thyrotoxicosis, for she had been taking three two-grain tablets of desiccated thyroid for months. She was informed of the real cause of her trouble, the thyroid was stopped, she was put to bed for ten days and, fortunately, she got over her nervousness, but ultimately she was not so very much thinner.

Still one other case comes to mind. When Dr. Eugene Hertoghe was in this country in 1914, he gave some interesting lectures on his hobby—"myxédème fruste" or minor hypothyroidism.

At one of his lectures in Brooklyn, an 18-year old infant was exhibited as an instance of what the major form of thyroid insufficiency would bring about. This happened in a presumably enlightened community with many well informed physicians nearby. The parents stated that the child had been taken to several physicians but without benefit. Here was a child allowed to go for years without the obvious treatment, and as a result of hypothyroidism its development was at least 15 years behind. The mistake here was surely one of omission and it is almost impossible to believe that such conditions are permitted to exist, for it is now almost 25 years since Doctor G. R. Murray first reported his clinical experiences with thyroid therapy in myxedema and cretinism. Parenthetically thyroid therapy is not the *ideal* treatment in such cases, for the other glands of internal secretion are not at work as they should be, and when thyroid extract is coupled with pituitary and sometimes other synergistic extracts it is often much more effective.

Organotherapeutic Measures in Hemorrhage.—The internal secretions seem to have much to do with the coagulability of the blood and a number of forms of organotherapy have been successfully used to control hemorrhage, either in a prophylactic way by artificially increasing the coagulability of the blood before an anticipated operation, or directly by using an extract to stop hemorrhage or oozing.

Several factors evidently are concerned in the chemistry of the phenomena involved, and as yet they are none too well

understood. Undoubtedly the internal secretions have a very decided influence upon the regulation of the calcium content of the blood and suitable organotherapy is capable of increasing the power of the organism to retain calcium which otherwise might be eliminated to the detriment of the body. Again the musculo-tonic influence of certain internal secretory products has been made use of to contract muscular organs and thus reduce hemorrhage from them. There is an opinion, backed up by quite a number of clinical experiences, which holds that it is possible to secure certain ferments from the blood or some of the endocrine organs, notably the liver, which when injected into the body either by the intramuscular or intravenous route, preferably the latter, stimulate the mechanism of blood coagulation especially in those dyscrasias where serious hemorrhage is likely even to cause death from exsanguination.

The principle from the posterior lobe of the pituitary body has been advantageously employed to increase the clotting power of the blood and has been recommended to be used prior to operations especially on the nose and throat. A single injection of 10 to 15 minims administered 15 minutes prior to the operation, will be of much service and in most cases will reduce the hemorrhage very decidedly. In fact it has been shown in the laboratory that such treatment increases the coagulability or decreases the usual coagulation time by approximately one-third.

The use of this same preparation as a preventive of uterine hemorrhage, either postpartum or due to functional disorders of the uterus or its adnexa has been mentioned many times and it has been stated that obstetrical cases in which pituitary has been used rarely are complicated by postpartum bleeding.

Attention has been called in this department to the value of a preparation of brain tissue named thromboplastin which has been used many thousands of times as a local application to wounds, bleeding surfaces and following operations. There is an element in this extract which speedily stops hemorrhage and its routine use as recommended by Hess and others will prevent the troublesome hemorrhage which occasionally follows tonsillectomy or other

operative measures in the nose or throat. The value of this measure is not appreciated as much as it deserves nor, for that matter, are the organotherapeutic measures for controlling hemorrhage used as often as their value seems to warrant.

A preparation of blood serum called coagulose is now being used to stop hemorrhage, especially the intractable hemorrhage of "bleeders" and the constitutional tendencies towards hemorrhage which evidently are dependent upon some subtle change in the ferments of the blood, or in the salts which seem to be so intimately related to the sensitiveness of fibrin-ferment and other similar substances. Coagulose is a solution of a precipitate secured from normal blood, usually of the horse. It is stable and obtainable in powder or solution, and may be used locally or by injection. The literature indicates that most serious hemorrhages which have not been controlled by the usual styptic procedures have promptly been stopped by one or more injections of this preparation.

Finally the French have for a number of years recommended certain watery extracts from fresh liver for the same purpose. Gilbert and Carnot were the first to work out this procedure and it undoubtedly has merit tho it has not come into general use in America. As a preventive of constitutional hemorrhages, hemoptysis or severe and protracted nosebleed it has shown itself of decided utility.

However the three first-mentioned agents: Pituitary solution, thromboplastin and coagulose, all of animal origin—give the practitioner a control over most forms and degrees of hemorrhage that was not possible prior to their comparatively recent introduction into practice.

Corpus Luteum in Climacteric Hypertension.—In his study of the vasomotor disturbances of the menopause (*Surg. Gyn. Obstet.*, 1916, xxiii, 667) Culbertson of Chicago states his belief that the increased arterial tension not uncommonly associated with the menopause may be due to a compensatory overactivity of the adrenals and pituitary following the cessation of ovarian activity. If this is the case the administration of corpus luteum should be of some

benefit not merely to the sympathetic and nervous manifestations of this period, but the increased tension should be reduced. According to Culbertson this is the case and excellent results have followed his use of corpus luteum in such conditions. The effect on blood pressure is not merely a consistent reduction, but the disturbed relation of the systolic and diastolic readings is made more nearly normal.

Not only does this give a wider range of prospective usefulness for the administration of lutein, but it is a reminder that the study of the blood pressure is in order in menopausal disorders.

Pituitary Medication in Obscure Cachexia.—Simmonds of Hamburg has reported some clinical experiences (*Deut. Med. Wochenschrift*, 1916, xlii, 190) which convince him that occasionally obscure forms of cachexia may be of pituitary origin. As a rule the presumed lesion in the pituitary is seldom an isolated manifestation; and he believes that the slowly developing pituitary insufficiency may not suffice to cause actual "pituitary symptoms." Simmonds is of the opinion that empirical pituitary medication is not improper in such cases, and in this somewhat unscientific position he is supporting a number of French "opotherapists" who have for years recommended total pituitary gland as a "cellular tonic" in obscure nutritional and metabolic disorders. The dose varies from one to five grains three times a day; and the remedy should be given with circumspection and continued for a number of weeks or months. Quite often this is a profitable addition to such other hygienic and medicinal treatment as the circumstances may indicate.

Thymus Medication in Hyperthyroidism.—Since Dor of Lyons and a number of others have recommended thymus medication as a useful procedure in certain forms of exophthalmic goiter, some attention has been paid to this phase of the treatment of a very difficult condition, and there are occasional references in the literature to this. But generally speaking this

treatment is not accepted and is only attempted in comparatively rare instances.

Recently Hawk and his associates in the University of Pennsylvania have studied the effects of thymus feeding upon the metabolism in goiter and in their last communication (*Arch. Int. Med.*, 1916, xviii, 800) they give scientific proof that there is at least a certain influence actually exerted by the administration of thymus.

They studied the metabolism of a number of elements, dividing the day into five periods and gathering accurate figures of the metabolic changes. The usually increased metabolic activity in exophthalmic goiter was watched and under thymus treatment the retention of all elements was seen to be depressed, while on its removal the elimination of these elements increased again. "Thus thymus treatment appeared to depress the stimulating effect upon metabolism (caused by thyroid excess) which supports the view of a possible antagonistic action of these glands, such as has been suggested by others on the basis of indirect evidence." It was also noted that thymus administration led to a greater retention of water and an increase of weight.

Evidently there is enough accurate scientific basis for the use of thymus when an excessive metabolism with emaciation and the usual findings of hyperthyroidism are present. At least the enthusiastic reports of some writers now have more than an empirical foundation.

The Purpose and Signs of Adrenal Activity.—Numerous have been the various functions ascribed to the suprarenal glands, but whatever these are, and according to Hiram Reed, (*Medical Record*, March 17, 1917), "it certainly is not, as long believed, that of maintaining a constant arterial blood pressure, there is no manner of doubt as to their emergency purpose. Stimulation of these glands reaches them through the splanchnic nerves, traveling direct from the brain without ganglionic interference and originating in those cerebral concepts termed emotions. The result of an outpouring of adrenin evidences itself in a massive exaltation of sympathetic nerve activity which shows itself in certain great

collective phenomena obviously designed to defend the organism in time of stress.

"The cardinal signs of suprarenal activity as at present amply demonstrated are: (1) An increase in the sugar content of the blood. (2) An increase in the number of red blood corpuscles per cu. mm. (3) A shifting of blood volume from the abdomen to the periphery. (4) The abolition of muscular fatigue. (5) The relaxation of the bronchial musculature. (6) An increase in coagulation rate of the blood. (7) An inhibition of digestion."

The Palliative Treatment of Hyperthyroidism.—In concluding his valuable article on relieving hyperactivity of the thyroid in the treatment of goiter, Leigh F. Watson (*Medical Record*, March 10, 1917) states as follows: "1. The quinine and urea injection is recommended only to control the symptoms of hyperthyroidism in cases of toxic goiter, and is not recommended to remove the tumor in atoxic (simple) goiter for cosmetic reasons alone.

2. The injection is a harmless procedure in experienced hands; it should be used, however, only in a hospital by men skilled in goiter work. It is almost painless, and there is no post-injection discomfort.

3. The injection of a weak solution of quinine and urea has little effect, necrosis and connective tissue formation occurring only after the concentrated solutions are injected.

4. If the injections are always made well within the thyroid, there will be no adhesions around the gland and operation will not be made more difficult because of the previous treatment.

5. The injection treatment depends just as much as any other procedure for the relief of hyperthyroidism upon the important factor of rest, with careful hygienic and dietetic supervision.

6. The role of other ductless glands in contributing to the symptoms of hyperthyroidism must be ascertained and treated accordingly.

7. The necessity of minimizing the slight pain of any injection by means of local anesthesia cannot be too strongly emphasized.

8. If the quinine and urea treatment is

administered without preliminary injections of a few minims of sterile salt solution, followed by injections of sterile water, attacks of acute hyperthyroidism, which might result disastrously, are liable to follow.

9. I believe the greatest field of usefulness for the injection will be found in those cases of beginning hyperthyroidism not severe enough to justify operative treatment, and as a preparatory measure to partial thyroidectomy in chronic cases of toxic goiter too ill to warrant any form of immediate operative procedure."



Poisoning by Mercuric Chloride and Its Treatment.—In the *Archives of Internal Medicine*, Lambert and Patterson outline their treatment as follows: The first indication is to give the patient whites of several eggs and then to wash out the stomach thoroly. This has usually been done before the patients are admitted to the hospital. On admission, the stomach contents are expressed and examined for mercury, the stomach is thoroly washed, and a pint of milk introduced. If no stomach contents are obtained before lavage, then the lavage water is examined for mercury. Urine passed spontaneously, or that obtained by catheter, is examined for mercury. The metal appears in the urine in from three to twenty-four hours after it has been swallowed. If more than a day has elapsed since the poisoning occurred, a stool should also be examined for the poison. If the first lavage does not allay the nausea and vomiting, it is repeated after an hour, and the following routine is begun as soon as the stomach will permit:

1. The patient is given every other hour 8 ounces of the following mixture: Potassium bitartrate, 1 drachm; sugar, 1 drachm; lactose, one-half ounce; lemon juice, 1 ounce; boiled water, 16 ounces. Eight ounces of milk are administered every alternate hour.
2. The drop method of rectal irrigation with a solution of potassium acetate, a drachm to the pint, is given continuously. The amounts of urine secreted under this treatment are very large. In one case 269 ounces were passed in twenty-four hours on the fourteenth day of treatment.
3. The stomach is washed out twice daily.
4. The colon is irrigated twice daily, in order to wash out whatever poison has been eliminated in that way.
5. The patient is given a daily sweat in a hot pack. It is imperative to emphasize the necessity of keeping up the treat-

ment with the colonic drip enteroclysis day and night without interruption. It entails discomfort for the patient, but the victims of accidental poisoning are always willing to do anything to recover from their plight, and the attempted suicide usually repents rapidly of his error, and the hope of his life being saved stimulates his patience and desire to cooperate.

Treatment of Hereditary Syphilis.—Sylvester (*Amer. Jour. Diseases of Children*, Oct., 1916) reaches the following conclusions:

1. Fetal syphilis should be treated by treating the pregnant syphilitic mother vigorously. The balance of evidence shows that the child is much benefited thereby.
2. Arsenic should be used in fairly large doses if immediate intense action is desired.
3. Mercury in one form or another should be used in conjunction with arsenic and continued a long time after all evidence of the disease has disappeared.
4. Treatment should be persisted in for at least two years, after which a negative Wassermann, after six months without treatment, may be considered evidence of a cure.
5. Neosalvarsan appears to be the most favored arsenical.
6. Lesions other than of the central nervous system may be readily relieved.
7. To date the therapy of the lesions of the central nervous system is disappointing but not discouraging.
8. Latent cases should be treated.

Recent Progress in the Treatment of Uterine Cancer.—Jacobson (*Journal of the American Medical Association*, October 21, 1916) says there are two factors that contribute to the belief that cancer of the uterus can be cured by other than surgical means. These are—first, its tendency to remain localized in the pelvis with metastasis only in the later stages, and second, the difference in malignancy of cancer in certain parts. Cancer of the fundus (adenocarcinoma) is the least malignant and cancer of the cervical canal is the most malignant. Cancer of the *portio vaginalis* stands midway between the other two types as regards malignancy, and results of operation or any other treatment of cervical cancer are as a rule unfavorable. There are three methods of treatment that have obtained favor. One is the Wertheim radical abdominal method. Another is Svhaute's extended vaginal operation, which seems to have its special indications in obese women. Third is the heat operation of Percy which has much to recommend it in otherwise inoperable cases. The rapidly increasing literature of radiotherapy in cancer treatment reveals the fact that a new era is at hand in the treatment of uterine cancer, and it seems certain that the destruction of cancer cells is possible by the Roentgen ray. Taking all the methods into account, the best results seem to be obtained by surgical measures, especially the

radical abdominal method, and the importance of early treatment is emphasized by Jacobson. He summarizes his article as follows:

1. In early or operable cases of uterine cancer, the best results are obtained from radical abdominal operation.

2. Owing to the difference in malignancy of uterine cancer, the type of cancer present should be determined whenever possible. Cancer of the vaginal portion and of the body of the uterus should be treated preferably by operation.

3. What shall be done with borderline cases is to be determined by the operator's judgment, and his experience with the radical abdominal operation.

4. Until Radium, Roentgen ray, or Percy's operation shall have proved their superiority to established methods of surgical treatment, their use should be restricted to the inoperable cases.

5. A combined form of treatment, that is, operation with radiotherapy, is a method of demonstrated value. Systematic irradiation with Roentgen ray or radium should follow every palliative or radical operation for uterine cancer.

Points in the Operative Treatment of Harelip and Cleft Palate.—Nicol, (*Glasgow Medical Journal*, Jan., 1917) after experience with several hundred cases, maintains that in cases of simple harelip operation may be advantageously done within the first few days of life. In alveolar harelip the first operation, concerned with reposition of the tilted or projecting intermaxillary bone, should likewise be undertaken early, and the second operation, dealing with the soft tissues of the lip, whenever the union of the alveolus is complete. In cleft palate also, the earlier the operation, the better. Where harelip and cleft palate coexist, union of the harelip materially increases the blood supply of the palate, and should therefore precede treatment of the palate, in which lack of blood supply is often a source of failure. In unilateral alveolar harelip, the best ultimate results are obtained if the flattening of the nostril is corrected largely by so cutting and wiring the intermaxillary that the tip of the nose and nasal septum are distinctly distorted to the deformed side. Extensive undercutting to free the ala and cheek being thus avoided, subsequent scar distortion is greatly reduced. Where considerable undercutting of ala, lip and cheek is necessary, the subsequent flattening and boardlike immobility of the nostril can be avoided by the insertion of tinfoil between the soft parts and periosteum. Mucous epithelium lines the raw tissues in contact with the tin plate so that these do not adhere on its withdrawal, but form part of the buccal cavity. To avoid an unsightly line of union of the probium, only those methods of paring the flaps for a median juncture should be employed. A tube worn in the nostril for several months is very effective in moulding it and preventing secondary flattening. At the operation for harelip the nostril aperture is purposely made

smaller than that of the normal side. The tube is introduced after some weeks or months, and is chosen to suit the shape of the normal nostril. If oval, the long diameter corresponds with that on the opposite side.

Caesarean Section.—Helbing in his interesting article in the *Cal. Eclectic Med Jour.* (April, 1917) gives the following conclusions:

1. There should be resort to Caesarean section in all cases of contracted or deformed pelvis.

2. The operation is best performed about the time of a full term pregnancy.

3. Caesarean section should be the operation of choice in all complicated cases enumerated above, but the surrounding conditions should figure in the choosing.

4. A viable child figures largely, in our concluding to resort to a Caesarean section.

5. The extraperitoneal abdominal method is the preferred technique.

6. The uterine wound, after being securely stitched, should be covered with omentum or bladder to prevent possible leakage or adhesions.

7. In cases where there has been infection from below, and we have opened into the peritoneal cavity, a hysterectomy should be performed. In contracted pelvis, myoma or other wrongs that are likely to cause complications, if future pregnancies supervene, a hysterectomy should be done.

8. Under any other circumstances the uterus may be left with the expectation that there may be no complications if pregnancy again takes place.

Treating Colds With Vaccines.—Sherman, in a recent issue of the *Medical Times*, says that the importance of treating nose, throat and bronchial infections, commonly known as colds, by therapeutic immunization cannot be overestimated, because all the more serious ailments, like pneumonia, endocarditis, rheumatic fever, mastoiditis, sinus infections and eye infections have their origin in these so-called colds. In case there is a low systemic resistance to the pneumococci or streptococci, which are responsible for these localized infections, the infective process is liable to involve the blood stream and do great damage before it is brought under control; but, if these minor infections are treated with bacterial vaccines an active immunity is established before the more serious complications have a chance to develop. In all my experience I have never known of a pneumonia or other serious complication to develop where vaccines were employed in the preliminary infection.

It is true that most people do not consult a doctor when they have a "cold," but this is more the doctor's fault than the patient's. If doctors would use vaccines regularly in the treatment of "colds," and show the patient that something really worth while can be accom-

plished, very few of these sufferers would neglect going to the doctor.

Mixed infections being common, a mixed polyvalent vaccine containing pneumococcus streptococci, staphylococci and the micrococcus catarrhalis should be employed. If an influenza epidemic is prevalent the influenza bacillus should also be added. Early treatment is important. With few exceptions marked improvement will be observed within one or two days. The vaccine should be repeated with a slightly larger dose on the second day. As a rule the cold will have cleared up by the third day of treatment. It is always advisable, however, to give a few more doses of vaccines at four or five day intervals to establish a lasting immunity, otherwise the patient may have a relapse.

Surgical Correction of Deformities of the Nose Without External Scarring.—Bourguet (*Bulletin de l'Académie de médecine*, Jan. 23, 1917) reports successful results in correcting humped, deviated, long, unusually large, or saddle noses by the endonasal route, thus obviating external incisions and scars which sometimes almost completely annul the esthetic success of operations carried out from the external surface. Under local anesthesia Bourguet separates the skin from the underlying supporting tissues. The bone and cartilage in the superfluous segment of the nose is then removed with a small saw or, in humped noses, with an electrically driven burr, and the skin restored to contact with the improved superstructure. In completely deviated noses portions of the frontal bones are luxated, the perpendicular plate of the ethmoid fractured, and the bony frame of the nose carefully straightened and held in place until consolidation occurs by means of an intranasal splint or external apparatus. In saddle nose, a piece of the tibia of suitable size, covered with the periosteum, is transplanted under the skin of the nose. In excessively long noses, excision of a triangular section of the septum and of the triangular cartilage is carried out to reduce the member to its proper size. Finally, in excessively broad noses, the ascending portions of the superior maxillary are displaced toward the median line and portions of the alar cartilages removed.

Acids and Alkalies.—A writer in the April issue of the *Eclectic Med. Jour.* says the things that are most common in practice are least often mentioned. Prof. Ellingwood said: "No condition is commoner with stomach troubles than an excess of the acids in the stomach fluids. Many cases of acute—extreme—pain are due to this condition alone, and are relieved very quickly by a dose of the bicarbonate of soda, thirty grains.

"An excess of hydrochloric acid retards digestion, and often to reduce this a large quantity of alkali is needed after the meals. Gas-

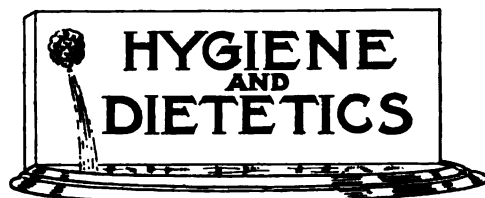
tric ulcer is always accompanied with an excess of acids, and alkaline treatment is needed in these cases.

"When the alkali is given after the meal it neutralizes a corresponding amount only of the acid, and must therefore be given in a large dose to diffuse itself through the acids that are in the stomach at that time.

"Theoretically—and the truth of this theory is borne out in practice—if from eight to twelve grains of bicarbonate of soda with five minims of fluid hydragris, with a little tincture of ginger, or in some cases a minim of the tincture of capsicum (especially if the mucous membranes of the stomach are somewhat enfeebled) be given before meals, this materially stimulates the pouring out of the gastric juice *before* the food is introduced, and when this is given there is not an excess of hydrochloric acid during the meal. This course also prevents lactic and butyric acid fermentation that is so apt to occur afterward.

"This simple course is sometimes curative in cases of persistent hydrochloric acid gastritis, and is more practicable than the use of artificial digestives, as with this course the digestion is brought about by normal processes."

Adding to this the great necessity for abundant doses of sodium bicarbonate in the acidosis of diabetes and the occasional call for it in bladder troubles and in the predisposition to eclampsia in certain forms of kidney deflection, with edema, we have before us a very valuable therapeutic picture that will aid us in many a pathological puzzle.



Diet in Chronic Constipation.—Butler, in his interesting article on Treatment of Chronic Diseases (*Amer. Jour. of Clinical Medicine*, Feb., 1917) says that in chronic constipation, the diet is of first importance. In a general way, we can tell the patient to cut down the meat and eggs and increase the vegetables, fruits and cereals. In some cases, I even eliminate the meat and eggs entirely for a time. If they are permitted, beef, chicken, mutton, or very well roasted pork may be prescribed, but only in moderate quantities. The pork must be cooked for at least two and a half hours, or until it falls to pieces under the knife when it is cut. I instruct my patients to eat freely of such vegetables as spinach, lettuce, celery, cauliflower, peas, bran, raw cabbage, greens of every kind, asparagus, Brussels sprouts, potatoes, in fact, practically all vegetables except cooked cabbage.

Good results are obtained from bran muffins or bran bread, letting the patient eat a muffin

or one or two slices of bread at each meal. Whole wheat or Graham bread may be substituted for the bran breads, if the latter prove objectionable. Fats of every kind are valuable, consequently we may allow plenty of bacon, cooked well, but not crisp, also cream and butter. Milk is an uncertain quantity, constipating to some and relaxing to others. The starchy foods, such as rice, macaroni, and potatoes, are of questionable value, and should be eaten in moderation.

The widespread notion among the laity that certain fruits are laxative is a true one, with proper restrictions and modifications. Oranges are laxative, without doubt, but it requires ten or a dozen of them in this climate to conquer an obstinate case of constipation; a fact that throws them out of the question in northern regions. This is not true of the warmer countries, where oranges alone may overcome the worst cases of constipation. The more juice they contain, the better their effect, but the citric acid, when taken in excess, induces catarrh of the intestines. Figs, though they are laxative, lean toward danger, for they are likely to obstruct the intestines unless taken with large quantities of water. In fact, about twice as much water should be taken with figs as with any other laxative fruit. All the fruits of the north are uncertain in effect, and, though the action of apples usually is good, few people can eat enough of them to produce an effect on the bowels. They may, however, take them with copious draughts of water. Water is the main agent here, as it is one of the most important in nearly all forms of treatment for deficient secretion in the intestine.

For fruit, I permit all kinds, except bananas, blackberries, and blueberries. To some, the raw fruits are not agreeable; in fact, in most cases, I order the stewed fruits. To those who can assimilate them, raw fruits are of value. The eating of an apple or two at bedtime or of raw figs, peaches, pears, or dates, throught the day, will be sufficient to keep the bowels in condition. Grape fruit and oranges are efficacious and stewed prunes, apple sauce, stewed berries of all kinds except blackberries, are of value.

Fly Killers.—For household use, solutions are prepared by the addition of 3 teaspoonfuls of the formaldehyde as found on the market, to a pint of water. Or 3 teaspoonfuls of sodium salicylate are dissolved in a pint of water.

Nearly fill a glass tumbler with either of the above solutions, place over this a piece of blotting paper cut roughly to circular form somewhat larger in diameter than the tumbler, and over this invert a saucer. Invert the whole device and then insert a match or tooth pick under the edge of the tumbler to allow access of air. The blotting paper will remain in the proper moist condition until the entire contents of the tumbler have been used; the strength of the formaldehyde solution will be maintained.

The authors state that either of these preparations may be safely used where there are

young children. The formaldehyde has an unpleasant taste and in the concentrations recommended, a harmful dose could not be taken. No harmful effects would result from a considerable quantity of the salicylate. Drs. Phelps and Stevenson U. S. Public Reports, Nov. 3, 1916.

Simple Dietetic Treatment in Diabetes Mellitus.—Williamson (*British Med. Jour.*) offers this method of treatment on account of its simplicity and efficacy, and states that it is worthy of trial when the ordinary diabetic diet does not promptly check the glycosuria. The treatment lasts for a week or ten days; during this period the patient ceases work and rests on a sofa. Every two hours a small amount of food is given, according to the diet sheet: 8 a. m.—Coffee, or tea, with one tablespoonful of cream. One egg (poached, boiled, or buttered). 10 a. m.—A glass of warm milk (half a pint). 12 noon—Custard (prepared from one egg and half a pint of milk). 2 p. m.—A glass of warm milk (half a pint). 4 p. m.—Tea, with one tablespoonful of cream. One egg (poached, boiled, or buttered). 6 p. m.—Cream, two tablespoonfuls, in half a pint of warm beef tea. 8 p. m.—A glass of warm milk, or one egg beaten up and added to half a pint of warm beef tea. 10 p. m.—Cream, two tablespoonfuls, in half a pint of warm beef tea.

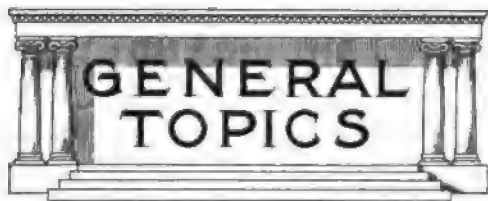
The patient takes no other food and the bowels are kept regular; the order of the meals may be varied to suit the individual. In many cases the glycosuria ceases within a few days and nearly always within ten days, but if such is not the result, this diet must be discontinued. After the cessation of the glycosuria, Williamson changes gradually at the end of a week or ten days to solid food. First, a little diabetic bread is allowed with the tea in the morning and afternoon and two of the other meals are omitted or diminished. Then a day or two later, bacon and green vegetables are allowed, followed by custard, in place of the meals at 12 noon and 2 p. m., and the meals at 10 a. m., 6 p. m. and 8 p. m. are omitted, and the tea and egg taken at 5 p. m. instead of 4 p. m. If the glycosuria does not return then the bacon at midday dinner may be replaced by fish and later by fowl or meat. Later the ordinary diabetic diet may be allowed and still later, a small amount of white bread.

Rules and Diet for Gout Patients.—Ochsner (*Annals of Sur.*, Oct., 1916) formulates the following rules for gout patients: 1. You should avoid all excitement or irritation, as attending receptions, shopping, church work and politics. 2. You should get an abundance of rest, by going to bed early and taking a nap after luncheon. 3. You should have an abundance of fresh air at night; consequently, you should sleep with wide open windows or on a sleeping porch. 4. You should eat and drink nothing that irritates the nervous system, like tea, coffee, or alcohol. Of course you should not use tobacco

in any form. 5. You should eat little meat. If you are fond of meat, take a small portion of beef, mutton or breast of chicken or fresh fish once or twice a week or at most three times a week. 6. You should drink a great deal of milk and eat foods that are prepared with milk, such as milk soup, milk toast, etc.; cream and buttermilk are also especially advisable. 7. You should avoid beef soup, beef tea, or any kind of meat broths. 8. You should eat an abundance of cooked fruits and cooked vegetables, or ripe raw fruits, or drink fruit juices prepared from ripe fruits. 9. You may eat eggs, bread, butter, toast, rice, cereals. 10. You should drink an abundance of good water or, if this is not available, you should boil the drinking water for twenty minutes or drink distilled water.

Gout.—Bulkeley, (*N. Y. State Jour. of Med.*) in speaking of gout, says: I have myself had gouty attacks off and on for many years, as also several acute kidney attacks. On a number of occasions I have been promptly relieved, even without other medication, by my so-called rice diet, for a number of days, and have also used it in many other cases with great satisfaction: the idea of it is to exclude protein and purin bodies as far as possible from the diet.

The diet consists of rice, butter, bread and water exclusively, three times daily for from five to seven days. The rice should be eaten hot, with butter and not with sugar and milk, and with a fork and not with a spoon, for half an hour or more at each meal, with great mastication. I give half a pint of water, not iced, with each meal, but not when food is in the mouth, and also half a pint of hot water, an hour before the morning and evening meal.



Narcotographs.—Abbe (*Med. Record*) says he has been more impressed of late years with the number of men, in commercial life especially, who are inveterate smokers, whose vest pocket bulges with cigars, who sit in an office smoking and being smoked at, forgetful of the successive hours during which they smoke. While there is less drinking of liquor, there is more smoking. The corner saloon is being replaced by the convenient corner cigar store, a welcome social change. The effect in practice is, that we see fewer cases of cirrhosis of the liver and alcoholic gastritis, but more cases of cancer of the mouth.

says that whatever may have been the disadvantages of the old preceptor system of medical instruction, it had many merits. One of these was the opportunity offered to the student of becoming imbued with the ethics of his profession. This was no unimportant part of medical training. The practice of medicine is above all altruistic; in all of his dealings the doctor is required to put himself last—to serve cheerfully where there is no reward, frequently ingratitude, and sometimes censure; to aid in disseminating information and advice which cut at the very root of his living; and to make the Golden Rule his motto in a world which is run on an entirely different system.

It is inevitable that among a body of men who perform the same service for the same community and yet who must not compete or advertise, there should arise a complicated ethical system. The principles of this the practitioner soon comprehends, but always there arise situations for which there seems to be no exact precedent; one doctor's idea of the right thing to do differs from another's and inevitably some one is offended. If this appears to be a difficulty to the seasoned practitioner, it is much more of a problem to the recent graduate who has had no definite instruction in such matters and may not have been fortunate enough to be thrown in contact with older practitioners who were able and willing to enlighten him. At first, he has only a certain amount of such information acquired in medical school, incidentally as it were.

Across the sea the General Medical Council of Great Britain has passed a resolution providing that in a medical curriculum, under medical jurisprudence or public health, or elsewhere, instruction shall be given as to the public duties of physicians and the recognized rules of medical ethics. This is especially appropriate just now in Great Britain on account of the complications arising from the war, which will be increased when peace is declared and the military surgeons return to their private practice, but it would have been a laudable resolution at any time.

The occupant of a chair of medical ethics obviously could not be dogmatic nor could he deal to any great extent in specific instances. His whole duty would be to lay down the basic principles of ethics, illustrating them with examples. He would also take under his care the instruction of the student in his future duties toward the community as a whole, his responsibility for the accuracy of vital statistics, for the safeguarding of society from contagious diseases, impressing on him not only the necessity of obeying regulations to avoid trouble with the health officer, but the wider conception of his duty toward society. The future practitioner should be taught, for instance, that it is better to act on his tentative diagnosis of scarlatina and exercise the necessary precautions to protect the community even if he thereby alienates the family. When we have our young physicians turned out from the schools imbued with such ideals of their profession, then indeed we shall feel that we are on the way toward our highest possibilities as an altruistic body of workers for humanity.

Should There Be a Chair of Medical Ethics?—A writer in the *N. Y. Med. Jour.* (Oct. 14, 1916)

American Medicine

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The Doctor as a Citizen.—Some doubt may exist as to the propriety of a publication devoted to medicine taking up general topics, or discussing matters that are not entirely medical in character, to the extent evident in this issue. But as we have remarked on more than one occasion, we are not willing to admit that there is any subject of human interest that may not be of utmost importance and concern to medical men. Once it was believed that physicians should confine their thought and activities to professional matters exclusively; to step ever so slightly beyond the bounds of medical practice was to lose caste and prestige. But for some time, a broader and more liberal view of the doctor's relation to life and living has prevailed, with the result that everything having any bearing whatsoever on the welfare of mankind has been looked on as definitely within the purview of the modern physician. With this conception of the doctor's relation to every problem "touching on and appertaining to" the well being of the people, no excuse is needed for the attention and space we have given in the past—and shall continue to give in this and in future issues—to matters of current moment. The successful physician today, as we know him, is first of all a well posted citizen, with a keen and comprehensive grasp of the great questions of public policy and affairs generally. As a consequence, he occupies an infinitely more important place

in his community than every before. He is a better doctor, because his powers of observation are broader, and his knowledge of mankind deeper and more comprehensive. His patients look to him to help them, not only to get well, to conquer their bodily ills, but also to live properly and to think wisely. He is their confidant, a bearer of their burdens, as well as their guide and counsellor in all their undertakings. In this hour of supreme importance in the nation's history, the doctors thruout the country stand not only as guardians of the people's health, but as factors of the greatest possible efficiency in the moulding of public opinion. If there is any subject in respect to which the people need educating or there is any information along particular lines which must be disseminated, the medical men of the land offer a means of achieving this end that has no superior; unfortunately this has never been appreciated at its real worth. To the authorities of the state and nation, we would say, therefore, with all the earnestness at our command, if you wish to reach the people, to drive the truth concerning any matter deep into their consciousness, do not overlook the inestimable assistance the doctors of the country can give you. To be sure, the physician's great mission is to minister to the sick, and safeguard the strong and healthy. But remember, the average doctor is a leader in his community, a man who is alive to his duties not only as a physician

but also as a citizen ; he enjoys the confidence of men, women and even the children to a degree unequalled by any other man. In a word, his opportunities enable him to carry a message into the homes of the land as no one else can.

The Food Problem.—Never was this country faced by a more tremendous problem than that which concerns the administration of our national resources. The United States, to the regret of every thoughtful person, has been driven into the world war. No alternative was left, and tho deep satisfaction must be felt at the forbearance shown by President Wilson, the hour struck when forbearance ceased to be a virtue and the national dignity and respect had to speak. Germany's erstwhile rulers had outraged and violated every principle of international comity and friendship. To have hesitated a day longer in declaring the resentment of this country and in entering upon the defense of all it stands for, would have meant intolerable humiliation and disgrace. Never a military nation, it was obvious from the first that the United States could not be a factor in the actual conflict for some time. In due course, with potential man power second only to Russia, and with military resources equal to or surpassing any other belligerent, America will doubtless have an army that will prove the deciding factor. But, fortunately, this country does not need to wait until its military forces are ready to pour on to the battlefields, to make its enormous influence manifest. Already the allied nations are feeling the effects of their awful efforts and the inevitable pinch of war. The food supply in England, France, Italy, and the other nations joined with them, is rapidly decreasing,

and here is America's great opportunity. Happily, this country, by mobilizing its agricultural resources can provide enough food to banish all danger of famine or want in the Allied nations. In view, however, of the magnitude of the undertaking and the urgent necessity that whatever is to be done be started at the earliest possible moment, Congress has been asked to provide ways and means of marshalling our food resources. The article by Dr. Lewis on page 370 states the proposition fairly and it is to be hoped that our lawmakers will recognize not only the urgency of the situation but the paramount need of making provision for an organization that will assure the efficient and successful administration of our national food resources.

Chaos Reigns.—But here it is almost fifty days after the declaration of war by this country, and nearly three years since the first shot of the conflict in Europe—and no definite plan of controlling and directing the food supplies as yet under way. For over a year it has been apparent to every thoughtful person that the resources of the United States would be needed to save Europe from famine. More than this it has long been thoroly understood that the erstwhile rulers of Germany, not only had no love for America, but only waited an opportunity to treat this country just as Belgium was treated. *If the Allies are beaten and England's navy destroyed, this country will be despoiled and put under tribute within six months.* The only salvation for America is to place its wonderful food resources at the service of the Allies, to make their defeat impossible. Then with the protection of the country thus assured we should lose no time in mobilizing every ounce of our power in money, men and will, in order to finish up

the job of "making the world safe for democracy."

With all this fully comprehended, the country stands today over seven weeks after the declaration of war, without any definite organization of its food resources; little or nothing is known of the supplies on hand, the available acreage, the amount of seeds or fertilizers to be had, the prospective crops, the actual transportation conditions, or the countless other matters that must be considered in any comprehensive plan. Altho the season is unusually late, planting time is rapidly passing without the Government instituting efforts that are needed to increase production of staple foods; farmers need seeds, fertilizers, and in many instances financial assistance. With a well organized food administration bureau or department, proper aid can be given to the farmer and by assuring him a minimum price for his crops, his efforts toward production would be vastly increased. *The problem before us constitutes the gravest crisis in the history of the world.* The comfort, yes, the lives of millions of men, women and children depend on this country. The people do not realize the gravity of the situation, or the menace that lies in a failure of America to supply not alone its own needs, but in addition, those of its Allies. Even Congress does not realize the urgency of the food question, for if it did, not another day would be allowed to go by without the passage of laws placing our food resources in charge of an organization capable of wise and efficient administration. God grant that an awakening and definite action may come before it is too late.

Protecting Medical Schools.—In England, there is a clamor for the establish-

ment of a director of public health who shall unify the activities safe-guarding the health and welfare of the civilian population. In Canada the dire effect of the depletion of the home medical forces has pointed out the importance of creating a single health organization for the Dominion. During the past few years there have been repeated endeavors to secure a national department of health, but the irregular practitioners in the country, the drugless healers, bone setters, Christian Scientists, osteopaths, chiropractors, and others have successfully opposed this measure.

At this time medical units from the United States are in actual service in England and France, and possibly performing their duties in various places near the Western front. The forces of life and reconstruction are already laboring under the emblem of the American republic against the disease and hideous mutilations resulting from modern warfare. It is an indication of the serious spirit of this country for aiding humanity that the soldiers of Esculapius were the first to cross the seas for active participation in the war for democracy.

From the statistics compiled by the Committee on Social Insurance of the American Medical Association, one learns that in the United States there is one physician to every 600 or 700 of the population. In France previous to the onset of the war there was one physician to approximately every 2,000 in the population, in England to every 1,500, in Ireland to 1,900, in the German Empire one to 2,100. In the Russian Empire there was only 1 physician to every 7,850 population. The reason for these discrepancies in the number of medi-

cal attendants in different communities is not difficult to understand. The concentrated nations with comparatively small areas of the country free from large sized villages and cities did not require as many physicians as, for example, appeared to be necessary in the United States. In 1910 there were 151,132 physicians and surgeons in the United States or 164 physicians per 100,000 population.

After almost three years of warfare it may be appreciated that the medical forces of the belligerents have suffered serious weakening thru death, disease, capture, and injury, so that today the problem of caring for the military and civil population is exceedingly serious. It is possible for the United States to send abroad 20,000 doctors without seriously interfering with the general medical practice of this country, provided that well organized plans for the redistribution of medical work are carried into effect. It will mean a heavier service for the physicians who remain in civil practice but this is a small contribution to the world war, compared with the benefits that would result to humanity thru aid administered by the medical forces of this Government sent to foreign fields.

The greatest factor in lessening the efficiency of the medical ranks of the belligerent nations has been their impulsive disregard of the importance of continuing medical institutions. Teachers were drawn from medical colleges ruthlessly. Teaching forces were disorganized. Undergraduates were hastened thru medical training and promptly drawn upon for medical relief. The natural result, which could have been foreseen had there not been a belief that the war would soon be over, was a prompt limita-

tion of the number of medical undergraduates and a consequent decrease in the number of available medical graduates.

In the light of this foreign experience it would appear to be sound common sense for this country to exercise unusual care in the selection of physicians for foreign service. While the times have called forth unusual patriotic enthusiasm and physicians have unhesitatingly offered their service, the nation can ill afford to undermine the medical colleges of the land.

Medical teachers should be selected with the utmost discrimination so that faculties may not be weakened and effective medical instruction hampered. In the supplying of the medical military contingent care must be taken, lest the future welfare of the country be endangered thru the destruction of the large organizations whose function it is to train the medical men of the future. The most efficient teachers, particularly in the specialties, should not be withdrawn from the effective work which they are now doing. There are numerous equally capable practitioners whose work for the public is personal in character and whose influence is not multiplied thru the minds of students.

It is a tribute to the spirit of American medicine and an evidence of *noblesse oblige* that universities have rallied to the support of the country and have offered unstintedly of their knowledge and power. It is a sad commentary upon the young medical men of the land that more physicians over the age of 40 are applying for service than under that age. The countless hundreds of young physicians, unmarried and unestablished in practice who are just completing hospital service represent the group of physicians whose services

should be conscripted if they fail to volunteer. Their economic value to the community would be enhanced by military service, thus freeing for patriotic teaching service the older men who have trained them and brought them up to their present state of efficiency. With this nucleus, the gain to the military and civil population would be enormous. Willingness to volunteer should not carry with it the necessary acceptance of the offer by the Government.

A timely consideration of foreign experience and an estimation of the needs of the medical profession and the future wants of the country call for a careful consideration of the policy to be followed in raising the medical forces for military and naval service. The colleges of medicine must be saved or the future of medicine and society will be jeopardized.

The Army and Venery.—Among the serious problems connected with the mobilization of large numbers of men in barracks, camps and concentration stations none is fraught with greater danger than the venereal disease. Safe-guarding an army from the inroads of the black plagues is a severe test of military organization. The experiences of England, Germany, and France, demonstrate that, as a practical question involving the military strength of a nation, no diseases merit more active and prompt attack than those due to venery.

Granting that venereal prophylaxis is a military necessity in minimizing the invalidism which tends to disorganize the fighting force, it cannot be gainsaid that to limit our efforts to calomel ointments and silver injections is to be guilty of scandalous inaction against the basic problem.

Thousands of young men lacking adequate instruction in sexual matters are transferred from peaceful communities, with standards of morals none too high, into an environment where a large measure of moral restraint has been removed. With a new freedom, acting from curiosity or impulsiveness, actuated by unsound traditions they are immediately confronted with a sexual maelstrom that will test their strength and may drag them down into subterranean channels where their vitality is slowly exhausted.

Exner, *Social Hygiene*, April, 1917, has pointed out in his study, "Prostitution in its Relation to the Army on the Mexican Border," that vigorous modern methods for the control of prostitution and venereal disease may be effective. The strife between the vicious interests of commercialized vice and military commanders can result in the rout of the former. As long as individual commanders, however, are permitted to use their discretion in the methods of attack, satisfactory results are obtained with difficulty. The Government at present is engaged in working out a definite policy of moral sanitation. The assumption of responsibility for the welfare of soldiers necessarily involves a duty to protect them from the mobilized forces of vice. Furthermore the strength and efficiency of the army demands that the soldiers be protected from the assaults of the gonococci and spirochetæ as well as from the shrapnel and bullets of the more visible enemy.

The repression of prostituting agencies depends upon the policy of the Government. Venereal prophylaxis is less effective than eliminating the human contagion bearer. A general order issued to all troop command-

ers requiring them to enforce restrictive measures against prostitutes, to discipline soldiers disobeying instructions, and directed against illicit indulgence would go far towards reducing the venereal invalidity rate.

It may appear contradictory to advocate penalization and sharp disciplinary measures for those failing to utilize prophylactic packets but, nevertheless, such a step is necessary. Physical and social disabilities are bound to arise, regardless of the imperious advice of the health officers and commanders of troops. Soldiers can not be suddenly transformed into paragons of sanitary virtue.

This entire question demands careful attention at the present time while mobilization camps are being established and troops are being transported to new communities for training. The world's experience has demonstrated clearly that vice and its concomitants are camp followers. To ignore this fact is negligence; to condone it is moral indifference; to attack it is militarily sound. The course of Governmental action will be carefully watched. Frankness, courageousness, and a determined definite policy are essential. Prudery must be cast aside; high standards of conduct must be created; ideals must be presented. The underlying social factors must be sought out and eradicated in so far as may be possible. Prophylaxis may be utilized to combat the results of human frailty and to protect the army from the deteriorating influence of venereal diseases, but it fails to reach the vitals.

The new army bill provides a more sensible mode of attack. The Secretary of War is authorized to take the necessary steps to prevent the establishment of or-

ganized prostitution within such distance of military establishments as he deems necessary.

In time the beneficial results of this law will become manifest—or is this merely an expression of impulsively hopeful optimism?

Physical Training.—The development of soldiers in an emergency is a monumental task. Teaching the manual of arms, giving instruction in field formations, and developing administrative skill form but a small part of the training of a soldier. Lord Kitchener demanded a year's time for developing his army—a trying year devoted to the training of the mind, building up the body, and securing the muscular coordinations essential to martial fitness. The real training of citizens capable of bearing arms and giving efficient defensive military service to the nation requires systematic training of boys and girls during their entire school career. The importance of physical development is emphasized by the high percentage of rejections of recruits among those applying at the recruiting stations.

In terms of education the program of military training in the schools of this country involves establishing the physical bases of the vital power making for sound health and vigor. The plan and syllabus for physical training in the elementary and secondary schools in the State of New York as adopted by the Board of Regents of the University of the State of New York upon the report and recommendation of the Military Training Commission evidence sound judgment. They call for medical inspection, instruction and hygiene, healthful recreative exercises, gymnastic training,

supervised recreative play and athletics as the essential elements in a campaign for the promotion of a healthful school population.

As a source of invigoration, recreation, and education, these physical training requirements commend themselves to all intelligent citizens. Impliedly school systems must provide medical inspection of schools, supplemented by follow-up work in the home in order to secure the actual benefits to be derived from the findings of the medical inspector. Accepting the basic fact that the health of school children is the primal factor of their physical, mental and moral inspection, it is patent that a vast machinery must be installed in order to secure the results sought. Dental clinics, gymnasiums, and school lunch facilities must play an important part in revitalizing the pupils found to be suffering from dental defects, malnutrition, and spinal deformities. In the program of athletics, marching, drilling, and similar exercises calling for effort or endurance, there will be need for an elaborate system of medical supervision to prevent the abuse of naturally frail bodies or constitutions weakened thru diseases of the circulatory, respiratory or excretory systems.

The possibilities of military training thus interpreted are incalculable. Under the spur of the present enthusiasm and interest it should be possible to secure adequate appropriations for the benefit of the growing generation. While Congress is appropriating seven billions of dollars for general war preparations, it will redound to the advantage of the nation if the several states make large appropriations for the training of the potential citizens. Money is required to conserve the strength and vitality for the future service of the nation, irrespective of

whether the country be in a state of war or be enjoying the comforts of peace.

War must not blind us to our responsibility to and for the huge civil and industrial army now in course of training in the public schools of this country. There are twenty million school children, over ninety per cent. of whom are in the elementary schools of this country. To disorganize educational systems, to relax educational laws, to place obstacles in the development of the men and women of the future constitutes a policy weak in judgment and lacking in vision. We must think in terms of children as well as in terms of adults. Physicians at least should harken to the inarticulate cry of the children. Physicians may yield valuable service if they will direct their energies and advice, their suggestions and influence to the conservation of school systems. Now is the time to cooperate with those wise educators who see the social and patriotic service in strengthening and lengthening the lives of the school children of today, the national armies of tomorrow.

School Lunches.—In modern warfare non-combatants suffer numerous hardships that were unthinkable during earlier years of strife. The era of personal combat has departed. Nations are now arrayed against nations. Every infant suckling at its mother's breast is numbered among those affecting the destiny of nations. The large problems of feeding the population are of momentous importance and their immediate consideration is regarded by many as the present paramount issue.

The forces of production require mobilization and effective assistance in order to prevent a decrease in the coming harvest,

even the climatic conditions should be most favorable from the time of planting to the harvesting of the crops. To production, however, must be added an organized plan for the transportation and the conservation of the results of the productive forces, so that the time, labor, and money invested in production may in no way be wasted. Furthermore, strong leadership is in demand to acquaint the consumer with his quasi-military duties in the preparation, preservation and consumption of food stuffs lest extravagance, ignorance, and indifference result in the practical destruction of a large measure of supplies essential to the national welfare.

It has been estimated that approximately 20 per cent. of the school children of this country suffer from malnutrition. With an added incubus of high prices the dangers to childhood are increased. All the causes of malnutrition hitherto existent will be heightened in their dire effects unless attention is given sufficiently far in advance to forestall the nutritive difficulties which may be imminent.

Malnutrition reduces the vitality of children; makes them more susceptible to disease, and thus directly and indirectly lowers the standard of vitality of the nation. The child of today is the soldier, the poet, the industrial worker, the physician, the commercial expert, the minister of tomorrow. Strengthen and safeguard childhood and the future race is served faithfully.

At the time of the Boer war England was obliged to reduce its standards of physical requirements for recruits several times. As a result there was promptly ordered an investigation into the causes of the physical deterioration so generally noted. A care-

fully prepared report indicated that malnutrition was an important factor. A natural consequence was the promulgation of the British Provision of Meals Act which made permissive the establishment of school lunches thruout the schools of England wherever their need was found to exist.

In the United States many plans for the feeding of school children have been tried. In general, greater attention has been given to high schools where the actual needs of the children are decidedly less than those found in the elementary schools. It would seem that, as part of the present movement for the protection of childhood, more serious efforts should be made to secure the installation of school lunches in the elementary schools.

The numerous functional disturbances resultant upon inadequate nourishment cause a certain degree of retardation and backwardness which tends to congest school systems and to lessen the educational capacity of the children. Under these circumstances school lunches have a dual value, physical and mental, and it cannot be doubted that the moral advantages are no less significant. Anemic children; those convalescent from the numerous contagious diseases of childhood; youngsters coming from homes laden with opportunity for contact with tuberculosis sufferers; the large group of children underfed because of parental neglect or deprived of adequate meals because of the economic conditions at home, are in dire need of the supplemental feeding at school which will tend to restore them to normal nutrition.

The value of medical inspection in the public schools is not limited to detecting physical defects which exist but, to be of constructive value, it must serve as the

point of departure for securing the remedial action necessary to correct the disabilities recognized and tabulated. The large proportion of children suffering from malnutrition in the school systems of this country are not benefited by the discovery of their underfeeding. It is necessary that due and proper steps be taken to counteract the under nourishment. The experience of foreign nations, supplemented by the results of school lunches in many cities of the United States, has demonstrated the health value as well as the educational merit of affording an opportunity for children to secure at low costs proper food stuffs, nutritious and well prepared, at the schools.

Strangely enough, lunches are generally advised in schools for the benefit of the anemic children, for those in the open air classes, or in other special classes established because of physical infirmity. From the point of view of preventive medicine it would appear to be an act of foresight and rationality to provide an opportunity for proper lunches for all children desiring to avail themselves of them, in order to maintain their vigor and vitality and to prevent their physical deterioration. There is a wealth of thought in the expression of Sidney Webb: "After bread, education."

A Legal Minimum Wage.—The United States Supreme Court has recently affirmed the constitutionality of minimum wage laws in supporting the decision of the Supreme Court of Oregon in the cases of Stettler and Simpson vs. the Industrial Welfare Commission.

This decision establishes, in fact, the constitutionality of the minimum wage laws now existent in eleven states of the Union and will tend to promote the passage of

similar laws for the rest of the country. A valuable compilation of the world's experience in minimum wage legislation, together with a discussion of the effects of low wages, the benefits of increased wages, and the advantages of a legal minimum wage, are to be found in the brief which was submitted to the Supreme Court of the United States for its consideration.

It has been more or less generally admitted that inadequate wages are incompatible with high standards of personal health and hence tend to lower the standards of public health. The dangers to women arising from low wages result principally from a lack of nourishment and a failure to secure medical care during illness.

Unfavorable working conditions constitute a serious problem in the treatment of the sick and in the prevention of diseases. With the stress and strain of industry and added thereto a low wage making an adequate diet impossible, the difficulties of daily recuperation make the wage earner less efficient and tend to reduce the resistance of disease and undermine the vital power.

A legal minimum wage law recognizes the importance of maintaining the physical organism upon a plane of continuous service ability, in effect it warns industry that while labor is for sale at a reasonable price the community disapproves of the purchase or sale of the vital substance of workers. A minimum wage should be sufficient to enable the worker to secure those essentials of life requisite to the maintenance of physical fitness.

If a minimum weekly amount necessary to keep a normal experienced factory worker ("not physically defective or crip-

pled by age or otherwise,") alive and potentially active averages over nine dollars a week while the prevailing weekly amount paid by employers is eight dollars, there is obviously a deficit between the cost of living and the weekly wage. This financial deficit continued for long periods of time results in bad housing conditions, undernourishment and insufficient medical care. As an indirect effect, the financial burden of industry is thrown upon the state or upon voluntary charitable organizations maintaining institutions for the relief of workers from resultant preventable conditions.

Expenditures for health vary in different occupations and wage groups and it is impossible to draw conclusions as to the direct effect of inadequate wages upon the various ailments from which workers, particularly women, suffer. It is recognized, however, that in the lower income groups the percentage of income expended for health rises in direct ratio with the increase of income. It follows therefore that the group of workers receiving dispensary treatment or suffering sickness without medical attendance are principally recruited from the under-paid industrial workers who are unable to meet the problems of disease satisfactorily because of their meagre incomes.

In a specific industry, unhealthfulness may in large measure be determined by wages. A low standard of living involving inadequate food, clothing and shelter, inevitably produces physical deterioration. The economic distress lays the foundation of impaired health and inefficiency.

Minimum wage legislation pre-supposes acceptance of the idea that "health is the foundation of the state." The state is interested not merely in the financial prosper-

ity of its citizens but in the health, strength and power of each of them. In the words of Frederick L. Hoffman, "There can be no question of doubt but that at the present time the average life and industrial efficiency of a workingman in the United States is not what it should be, and it is manifestly the duty of the State, of labor, of labor associations, and of workingmen themselves to take the facts of the problem into consideration and by intelligent cooperation raise to the maximum the standard of life and health in American industry."

It may not be possible for the state to assume absolute control of the health of individuals, but it is possible for the state to determine the conditions under which people shall live and expend their energies. The effect of minimum wage legislation will be reflected in a higher state of physical power and an increase in the development of national strength. Measured in terms of the health of workers, it should mean an increase in medical service during illness, a decrease in occupational diseases and industrial accidents. If effectively developed thruout the country there should be a marked decline in the attendance upon dispensaries, with an increased number of pay patients in the wards or private rooms.

Our Country; its need is our need, its honor our honor, its responsibility our responsibility. To support it is a duty, to defend it a privilege, to serve it a joy. In its hour of trial, we must be steadfast, in its hour of danger we must be strong, in its hour of triumph we must be generous. Tho all else depart, and all we own be taken away, there will still remain the foundation of our aims, the bulwark of our hopes, a rock on which to build anew—our country, our homeland, America!



"INTO THE VALLEY OF DEATH."



Serving the Nation.—American medical men need no advice as to their duty to the country. Their patriotism needs no spur or whip. Hundreds and thousands of skilled physicians, men of importance in their communities whose incomes range from \$3,000 to \$30,000 have already given—or are about to give—their services—maybe their lives—to meet the medical needs of our military forces. Cheerfully and proudly the medical men of the country will make the financial and other sacrifices required of them. There is an exaltation—a real joy—in thus dedicating our all to the land we love that gives each and every one of us a new outlook on life. It is not too much to say we are better and more capable men as a direct consequence. It is almost as though much of the dross and coarser portions of our make-up were burned away, leaving the finer, better parts behind. No man can feel the fires of patriotism and let them play upon his soul without becoming cleaner and purer in his aims and aspirations. Many as will be needed for medicomilitary service, a great majority will be denied the opportunity of serving the country in this way. But let no doctor despair because his age, some physical infirmity, or conditions he cannot control prevents him from taking part in the work that every medical man instinctively craves. There is probably no physician in America whose pulse does not quicken or heart throb with the desire to get into the ruck of the war. It is his manhood making itself manifest. But if many of us are doomed to disappointment in this particular direction, it does not mean that any one of us will lack for opportunities for national service. Doctors are trained men, men of keen insight, sober judgment and broad comprehension. They are good executives, excellent administrators, and counsellors of unexcelled foresight

and vision. Sooner or later our Government is going to realize that there are many “General Woods” waiting to be called from the ranks of the medical profession. The proposed food laws, the transportation problems, the ship building enterprises, the myriad other undertakings of the Government in addition to its fighting forces are going to need men who can think clearly, judge wisely and act bravely; men of broad vision, disciplined minds, and the ability to decide quickly and correctly. When the President and his advisers recognize the wealth of executive and administrative—yes, diplomatic—material at their command in the medical profession, there will be unlimited opportunities for national service.

The Purchase of Liberty Bonds by Physicians.—In the meantime, altho doctors’ incomes—with the extra demands on them for new books, new appliances, etc., etc.—have little elasticity or stretching power, we hope many physicians will be able to join in this simple way in upholding the hands of the Government. This coming year, with increased taxes on income, the proposed increase of postage rates and the constantly increasing cost of paper and labor, the medical journals will have little means to buy bonds or anything else. Nevertheless, the directors of AMERICAN MEDICINE propose to invest all of its available funds or surplus in Liberty bonds. All those connected with its administrative staff likewise intend to purchase all they can. It is an obligation we owe to the Government, to do our part in this way to aid and support it in its work for the American people—for the future of the American nation.

We have received a number of inquiries from medical men relative to the purchase of Liberty bonds on an installment basis. This has suggested the idea that there may

be some physicians, who for one reason or another, do not care to ask their local banks to sell them Liberty bonds on the deferred or partial payment plan. To medical men therefore, who wish to purchase Liberty bonds on a weekly or monthly basis the resources of AMERICAN MEDICINE are available. We will gladly serve you without charge, partly with the object of doing our humble part to promote the sale of Liberty bonds and partly to help our readers to do their part. Full particulars will be sent to any doctor who wishes to buy Liberty bonds.

To young physicians or undergraduates who want to do their "bit," we have a most attractive plan whereby we will give a hundred dollar Liberty bond for a certain number of *new* subscribers. Here is a splendid opportunity for Red Cross workers to help dispose of Liberty bonds. Full information to any one who may be interested. Let us "do our bit" together.

A New Way to Destroy the Publishing Industry.—As we go to press word comes that Congress proposes, instead of increasing second class rates, to impose a special tax on advertising, probably three or more per cent. It does seem as tho our national legislators had made up their minds to penalize the publishers of the country, and if one method proves inexpedient to lose no time in finding another and more drastic one. Well, if a year from now the publishing field bears a close resemblance to those sections of France where the German armies have come and gone, there may be some of our senators who will regret their unwillingness to believe that any increase of burden on an industry already staggering under the excessive cost of paper, spelled ruin. Destroy fifty per cent.—one-half—of the publications of the country and 250,000 printers—many men of advanced years—will be thrown into the ranks of the unemployed. It is all very well to say these men can get other work. Some of them can, but most of them cannot, because they are trained in a single line of endeavor. They can take up no new kind of work at their time of life—and they are not fit for the trenches. Idle men are dangerous at any time, but especially so in war time. Idle men make mobs, and no one ever knows

what mobs will do, or what effect they will have on the people. We earnestly hope, therefore that the Senate will think well before they "cast the die" that surely means irrevocable destruction and ruin to hundreds of useful publications, with misery and want to thousands of those who depend on the existence of these journals for their livelihood.

Let no one cast a slur on the patriotism of the publishers of the country. No group of men can do more—no group of men *will* do more. Tax us, yes; take our profits, yea, even to the last penny; ask us for anything we can give; but in the name of common sense and right, do not destroy the industry by placing an impossible burden upon it.

The publications of America are doing a splendid work under conditions that have grown progressively worse for several years. They fill a place in the lives of the American people that is beyond estimation. Wipe out these useful journals and not only will a serious economic loss result, but the people, particularly in the sparsely settled sections, will be deprived of much that makes their lives tolerable.

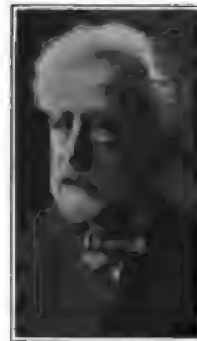
We do not need to speak of the scientific and technical journals. We are willing to go on record as saying that there is not one of these, even the most insignificant and seemingly inconsequential, that does not have some real value. Place a tax on their advertising patronage—pitifully small at best—and their light will be snuffed out as one would a candle. The reason is plain, for these journals have no "margin of safety" to meet emergencies, and the paper situation has already increased their trials and tribulations to a dangerous degree.

To our senators and congressmen we can only say in closing, do not do this monstrous wrong to the publications of the country. Let them live, and tho the great majority may not prosper, there are many that will. A profit tax on these larger journals will bring an income greater than any tax on advertising ever can—and the industry will be saved to the people.

Our German-born Colleagues.—Delicate as the subject is, we believe it a duty to express certain thoughts that are bound

to arise in this connection. There can be no question but that many of our German-born colleagues are going to find themselves in a very difficult position as a result of the conflict between this country and Germany. Unthinking and narrow-minded people are going to subject them to many discourtesies and indignities. Those who are inconsiderate and intolerant will lose no chance to make medical men as well as all others who speak with a German accent, or who have a German name, feel that they are aliens—outsiders. Such acts cannot be too severely condemned. Instead of showing the slightest ill feeling or unkindness to our German-born citizens, we should go out of our way to demonstrate our friendship and good fellowship. If we stop to consider the situation they will have our sympathy, not in the sense of commiseration but purely as a matter of appreciating the hard position in which they are essentially placed. To a man we believe our German-born colleagues are as loyal and devoted to the United States of America as any other citizens. To entertain any other idea is to offer them a most unwarranted and unmerited insult. But knowing how deeply rooted in the German mind and character is the love for certain German social institutions, traditions and associations, how dear are early memories and how many natural ties must remain, even tho they have transplanted their lives and activities to a new land, we would be lacking in the better instincts if we failed to understand how saddened and unhappy they must feel to see war between the land of their birth and the land of their adoption. Surely, it is no crime to have a tender regard for one's native land. A man may have little sympathy for the rulers of that land or its political system, and yet every rock, every brook, every spot he knew as a boy may be dear to him. The town or village where he lived, the house in which he was born, the schoolhouse in which the first seeds of his education were sown, all have their appeal to his memory. Many of those who have left all these and taken up their life-work in this country, still have fathers, mothers, and countless other relatives in the land of their birth. Is it strange that men cherish these ties, that they look upon them as among their dearest possessions? Are they any worse citizens of the United States because they treasure the memories of their

childhood in Germany? Certainly not, and any man of any nationality who has not the capacity of loving the place where he was born, of feeling the ties of family affection, and of treasuring the hundred and one recollections of his early home, however humble it may have been, lacks much that makes for character and moral worth. Rarely do our German-born citizens show this fault, and not the least of the many qualities which they have brought to our national life, has been the sentimental regard they have retained for their native land. As for their allegiance or fealty, that is quite another matter, but the knowledge we happily possess concerning our German-born colleagues makes us confident that these are faithfully given to America. In this connection we can only repeat, we know no medical men whose citizenship is of a higher or finer type—or comes closer to the ideals of Americanism—than those of German nativity. As these words are penned, the writer's thoughts



turn to Dr. Abraham Jacobi. If there is a better American or more loyal citizen, a truer gentleman or more skillful physician, we do not know him. With well over a half century's faithful work in this country as a practitioner of medicine, Dr. Jacobi has been a constant inspiration to his students and fellow workers. He well represents the innumerable German-born physicians whose scientific labors have done so much to give medicine in America its present standing. Together with our other foreign born physicians—of English, French, Italian and other nativity—they have contributed their part and we are glad to acknowledge the aid they have given to a common cause. United, they have all worked for one great end, the success of American medicine. That America stands today in the front rank of medical science we can ascribe in no little degree to the earnest, untiring zeal and devotion of our foreign born—and in many instances foreign educated—physicians. They have thrown their efforts into the common pool of endeavor, and all humanity has been the gainer.

Therefore, as we faithfully carry on our work, grateful for our opportunities for service, let us recognize that medical men know no race, no nationality and no class in their common purpose. Every physician in this great land of ours who does his duty as a medical practitioner, and observes his obligations under the laws of the country, is entitled not only to immunity from discourtesy and insult, but all necessary protection against indignity and attack from the thoughtless.

As members of the great brotherhood of medicine, let us be ready and quick to defend any colleague who may thus be made the victim of prejudice and intolerance.

The Campaign Against Tuberculosis in France.—Tuberculosis has been prevalent in France for many years. The conditions brought about by war, have, however, rendered the situation in this respect worse by far until, at the present time, the ravages of tuberculosis are exciting much apprehension among the authorities and the medical profession. In the first months of the war France with sublime courage was fighting for her very life and had no time to select her soldiers with regard to their physical fitness. She was compelled by dire necessity to take them as they came and the consequence has been that the hardships accompanying the peculiar manner of fighting has searched out the weak spots in the physical make-up of her unseasoned soldiers; of these the tendency to tuberculosis has been the most distinctive. Of course, the close association of life in the trenches has spread the disease like wildfire. France is endeavoring now to minimize as far as is possible the results of her early neglect by removing those infected with tuberculosis as rapidly as the disease can be detected.

It must be borne in mind that altho in many ways France is the most cultured nation of the earth, she is far from being as progressive in all matters pertaining to sanitation and hygiene. Her backwardness in these matters is unaccountable and doubtless has a very considerable bearing on the prevalence of tuberculosis.

Dr. Hermann Biggs was sent to France last year under the auspices of the Rockefeller Foundation to investigate and give his

views on the state of affairs. He reported that tuberculosis was undoubtedly one of the most serious problems of that country and one that should be grappled with energetically and at once.

It has been decided now that the Rockefeller Foundation with the approval of the French Government and in cooperation with the American Red Cross will endeavor to curb tuberculosis in France. A comprehensive and well organized plan looking to the control of tuberculosis in all parts of France will be put into working order, and by these means not only will the foundation be greatly assisting our ally, France, but at the same time, will be making of France a more healthy place in which American troops may live. This beneficent work will be carried on under the supervision of the French Central Committee and local committees which are being organized thruout provincial France. According to the *New York Times*, May 27, 1917, the present plans of the foundation as announced on May 26, provide: 1. The maintenance of a central organization which will have a general supervision of the work. This organization will be under the French Government and will combine the special interests in anti-tuberculosis work. It is expected that the Central Committee will, among other things, undertake the preparation of literature and exhibit material and will carry out a comprehensive scheme of education for the control of tuberculosis. 2. The organization of four units which, moving from place to place, will carry on a campaign of education and publicity. 3. The demonstration of dispensary methods and organization of local committees under whose auspices permanent dispensaries will be established. 4. The establishment of, at least, four centres for the training of nurses and others who will have charge of the dispensary work.

No work ever undertaken by the Rockefeller Foundation has had a more noble object. It is both humanitarian and patriotic and also should prove of the utmost value from the standpoint of medical science. The treatment of tuberculosis in all its phases is more thoroly understood in this country, especially in New York City than in any other part of the world, and no body of medical men better fitted to cope with the disease on an extended scale could be found anywhere than those who will be sent out

under the auspices of the Rockefeller Foundation. France has won the admiration of the whole world—even of its enemies—for its heroic devotion to her ideals and principles, and if America can help her now by saving her children from the talons of tuberculosis, no time nor effort should be lost.

The Fallacy and Futility of Child Labor.—That child labor is beneficial to anyone is a fallacious and pernicious doctrine. Its cruelty and futility have been demonstrated times without number. In the long run, it is obvious that the employment of children must be an economic loss to a nation. The result will be that the strain put upon a child of tender years by manual labor will render him or her less fit by far on reaching maturity to produce healthy offspring, and the nation will be the chief sufferer. Industrialism begets money, but as a rule, deteriorates the race and every manufacturing country learns this lesson sooner or later. Therefore, it is a fact upon which little stress need be laid that child labor is an evil thing from all points of view.

It has been argued that war changes all such considerations, and that if child labor will assist to win a war, that it should be employed without demur. Certain senators of the South, probably not averse to child labor so long as it does not affect their own children, have used this argument and are said to be considering an attempt to suspend the child labor law during the war.

In this country, however, there is no excuse for suggesting a retrograde step of this character. The gaps made in necessary industries by the withdrawal of men to serve as soldiers have not and will not be sufficient to justify the suspension of, perhaps, the most humane law ever passed. In England where the supply of able-bodied men is lamentably short, certain children were exempted from school so that they might be able to work. The plan proved a failure. The child's education was neglected at the very time when he was best able to assimilate instruction, and thus both his body and mind were in a fair way of being stunted. The cry for child labor is actuated by the selfish motives of a group of men whose only God seems to be Mam-

mon and with whom patriotism runs far behind their own interests. There is no necessity to go back to industrial slavery in order to fight the battles of this country and it is eminently fitting that an earnest protest should be made against the mere consideration of the reversion to so barbarous a procedure as the suspension of the child labor law.

A National Food Administrator.—As we go to press word comes that President Wilson has made Herbert C. Hoover, the Director of National Food Administration. There is no man in the whole country today who has Mr. Hoover's particular qualifications for this great position. The splendid services rendered by this typical American while directing relief work in Belgium have made him a citizen of the world. The knowledge thus gained and the vast store of information he has acquired, will enable him to enter upon the biggest job of the century without delay. One great advantage which Mr. Hoover has over all other men who might be considered for the position is his appreciation of the size of the undertaking he is face to face with. He knows that all history records no task as enormous as the efficient control and administration of this country's food resources, with its bearing on the welfare of millions of foreign people besides those of our own nation. The heartfelt admiration we have for "Hoover of Belgium," the deep satisfaction we derive from our knowledge of the masterful way he upheld the ideals of civilization during Belgium's darkest hours of distress and despair, and the gratitude we feel to President Wilson for selecting a man so admirably fitted to serve as administrator of the nation's food resources, are responsible for our presentation of the excellent likeness of Mr. Hoover in this number. Not only do we deem it desirable for the physicians of America to be familiar with the features of the man who is going to play so important a part in the immediate affairs of the nation, but we deem it a privilege to thus compliment a man whose career and achievements exemplify so well the spirit of national service, the desirability and importance of which we are seeking so earnestly to demonstrate thru this special number.



HERBERT C. HOOVER.

From American Medicine.



ON THE TREATMENT OF WOUNDS SUSTAINED IN WARFARE.

BY

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In response to your invitation to contribute a paper on the surgical lessons of the present war I may refer to the question of the treatment of wounds quite shortly and without entering into any detail. In reality it is not possible to speak positively on the best method of treating war wounds owing to the arrangements employed in our Army (and I presume in the others also) for the disposal of the injured. I refer to the fact that patients are passed to the base as rapidly as possible, being handed from one surgeon to another, so that no continuity of treatment can be maintained, and no positive conclusions can be drawn, as to the efficacy of any particular line of treatment.

In speaking of the treatment of wounds in war and the results, I have chiefly in my mind compound fractures and injuries of joints as being those which test the value of any system of treatment most severely. Now in this war, up to quite recently, when surgeons began to adopt Carrel and Dakin's methods, practically every compound fracture with a large wound of

entrance or exit, in fact every wound of any size, with the exception of simple perforating bullet wounds, when they arrived in this country were suppurating, foul, and generally in a bad condition.

On the other hand, our experience of compound fractures and other accidental wounds in this country, when treated by the Listerian methods, is quite different. If the wounds are thoroly disinfected soon after the injury, they run an aseptic course; the wound fills up with blood clot which adheres to the sides of the wound and becomes organized, so that after some weeks when the crust which has formed on the surface of the clot is peeled off, the wound may be found completely healed, or a small superficial sore is present which is not suppurating and which heals readily. With careful antiseptic treatment it is the exception for suppuration to occur in these wounds, and if it does take place it can usually be explained by some error in technic.

The consideration of the reasons for this marked difference in results in the two cases is most important, but before dealing with that point I may say that altho these wounds arrive in this country in such a bad state, and altho the patients are often in a general septic condition with high temperatures, etc., yet the mortality is surprisingly low, and as far as one can gather

(tho no statistics have been published as yet) such conditions as pyemia and phagedena are comparatively rare. (Most cases of acute gas gangrene die at the front and rarely reach our shores).

There are various points which help to explain this marked difference from former wars. The chief of these is, in my opinion, the very free drainage with tubes which is so generally employed at the front; the decomposing blood and serum, instead of being shut up in the wound, is allowed to escape freely, and there is also a free flow of serum from the wound containing antibacteric substances which, tho not able to keep the wound anything like aseptic, nevertheless helps considerably in diminishing the sepsis at first. Another important point in this campaign as contrasted with former ones, is that formerly there was no proper disinfection of instruments, and consequently infection was carried from one patient to another, while at the present time, whatever views the surgeons may hold as to the treatment of the wounds, they are all agreed at least as to the necessity of sterilizing their instruments by boiling. In former times where instruments were not disinfected the infection was carried from patient to patient, and in its course it became more and more virulent. Again, the dressings employed, whether antiseptic or not, are, at the present time, more or less aseptic, a second reason why there is less contamination of the wound.

But loss of life is not the only grave result of sepsis; altho the mortality is much less all sorts of troubles which formerly occurred still arise, such as extensive necrosis of bone, multiple abscesses, osteomyelitis, infection of joints, secondary hemorrhages, etc., involving prolonged ill-

ness, amputations of limbs, excisions of joints, stiff joints and all sorts of disabilities and much illness and disablement which would be avoided if only the wounds were aseptic.

Now why is it that the same aseptic results are not obtained in war wounds as in wounds in civil practice? Various points render the chances of an aseptic result less good in war than in civil life, apart from the fact that very few attempts have apparently been made to disinfect the wounds at the front.

(1) In modern trench warfare the wounds are as a rule very heavily infected with bacteria. On the one hand the skin is dirty with earth containing many bacteria and the clothing is also much soiled with mud and if this mud or clothing is carried into the wound with the missile, the result is bad. In addition the wound becomes further infected after its infliction from the mud in which the patients lie.

(2) The earth in the trenches, especially if they have been long occupied, contains quantities of bacteria of a very virulent character, such as tetanus and gas gangrene bacilli.

(3) The wound is frequently so complex, some of the tissues being stretched rather than divided (and consequently contracting again and covering the hole) that it is by no means easy to identify and gain access to all the infected recesses of the wound.

(4) There is often great delay before the patient comes under medical treatment and in the meantime the infection has got such a hold that it cannot be rooted out.

(5) In the course of an action the number of wounded is often so great that they may have to wait a considerable time be-

fore they can be attended to and in the meantime the infection is spreading.

(6) It is frequently stated, as the result of experiments performed some years ago, that the bacteria carried into the wound with the bullet are driven into the tissues so deeply that they are inaccessible to chemical agents.

(7) The tissues are so damaged (it is asserted that this damage is much greater than in civil cases) that they fall a ready prey to the bacteria and provide a good soil for their growth.

These points have an important bearing on the treatment of wounds but before going further I may indicate the chief lines of treatment which are adopted.

1. We have those who take a hopeless view of these cases, as far as the avoidance of sepsis is concerned, and look on it as inevitable. They do not favor any active treatment but arrange for the drainage of the wounds and attend to the patient's general condition. This is hardly a line of treatment that one is prepared to recommend.

2. We have the so-called "physiological treatment" in which the destruction of the bacteria is left to the antibacteric mechanisms of the body; the chief point in this treatment is an attempt to increase the flow of serum in which the antibacteria substances are supposed to reside. I need not take up the time of the reader in considering this plan. Practically it is a complete failure, it is founded on bad physics and on experiments with capillary tubes that are not at all convincing.

3. Attempts are being made at the present time to find antiseptic substances which will kill the bacteria without at the same time seriously injuring the phagocytes. This is certainly an ideal aim, and is on the

same lines as Ehrlich's salvarsan. Dr. Browning and his colleagues at the Bland-Sutton Institute of Pathology hope to find such a substance in "flavine," and to a lesser extent in "Brilliant Green." These substances have been tested by Mr. D. Ligat at Middlesex Hospital with remarkable results, and he gives the preference to flavine. It certainly looks as if this antiseptic more nearly approached the ideal which Lister always aimed at than any other as yet tried and if so much of what follows in this paper becomes out of date, I can, however, give no personal experience, as "flavine" is not as yet on the market and I have not therefore been able to procure a specimen but I have been very favorably impressed by the statements made and shall certainly make a thoro trial of it as soon as it can be obtained.

4. The use of so-called "general" antiseptics which kill a variety of bacteria, some no doubt more readily and quickly than others; all of them, however, if strong enough to kill bacteria, are also more or less injurious to the phagocytes and the tissues which come into contact with them. This plan, altho no doubt crude and open to various objections, is the only one which as yet meets the requirements of the case; it may, however, as I have said above be superseded at any time by substances of the class referred to under No. 3.

Now there are two ways in which these general antiseptics can be used, viz.:—(a) to produce rapid disinfection and complete destruction of the bacteria in the wound; and (b) to produce inhibition of growth and destruction of the bacteria with less injurious action on the tissues.

From the commencement of the war the general opinion has been strongly against

¹ *British Medical Journal*, January 20th, 1917.

any attempt at primary disinfection of wounds and I have been unable to persuade the authorities to look into the matter thoroly. Indeed the various reasons which I have mentioned above to explain why the same results are not attained in war wounds as in civilian practice have in reality been brought forward in the first instance as reasons for not attempting to disinfect a wound by antiseptics. But altho the points before mentioned have been brought forward at one time or another as arguments against the *possibility* of disinfecting these wounds either rapidly or slowly we shall find on looking more closely into the facts that they do not prove the impossibility of disinfection. They are no doubt very strong arguments against the *probability* of rapidly disinfecting these wounds and obtaining an aseptic result but there are a sufficient number of facts, to some of which I have referred in previous papers, which show that the rapid disinfection and aseptic course of such war wounds is *possible*. As a matter of fact, the presence of these difficulties, instead of discouraging efforts to obtain an aseptic result, ought to stimulate the surgeon to try to overcome them. For no one can deny that an aseptic wound is an ideal condition and that it is worth while taking any amount of trouble to obtain such a result. Not only does it mean safety for the patient, rapid recovery and avoidance of many complications and troubles, but it lessens the anxiety of the surgeon and the labor also in that, after the first few days, the dressings become much more infrequent and the amount of the dressings steadily less.

If we look at the points which I have mentioned above—the massive infection, so common in these wounds, the variety and virulence of the bacteria which enter,

and the complexity of the wounds—these are not reasons why the surgeon should be content to let the wounds suppurate but on the contrary they show the great necessity for exceptional energy and care in the disinfection. This means a very thoro opening up of the wound, the application of a sufficiently powerful antiseptic in considerable quantities and the provision of a store of the antiseptic in the wound or if that is not possible, very frequent renewal of the application. Provided the other conditions are favorable the difficulties can be overcome in a considerable number of cases.

More formidable are the difficulties referred to under Nos. 4 and 5. If there is great delay before the wound comes under proper treatment, a delay lasting 24 hours or more, the chances of rapid disinfection such as may be carried out successfully at an earlier period are quite small and one must resort to some less rapid method, such as Dakin and Carrel's plan. Similarly as regards No. 5 there seems no doubt that bacteria may be carried for some distance into the tissues, possibly further in gunshot wounds than in wounds inflicted in other ways, but I doubt if this is such a serious point as it is held to be. It was as the result of the consideration of these points that I started the work on diffusion of antiseptics in bloodclot and tissues and the necessity for leaving a store of the antiseptic in wounds, with regard to which I have published several papers during the last two years. I shall return to this matter presently.

The last point to which I referred above (No. 7) is the mainstay of the opposition to the use of antiseptics as a prophylactic measure to prevent the development of sepsis, viz., the severe damage done to the tissues by the missile. The argument here

is that, by applying strong antiseptics to the damaged tissues, the weakened tissues are killed and become a still better pabulum than before for the growth of bacteria. But if the result of the antiseptic application is to kill all the bacteria in the wound, and if steps are taken to prevent fresh infection, which is quite easy, it does not matter whether the surface of the wound is injured or not by the antiseptic. If it is injured and remains aseptic the whole wound fills up with bloodclot and the injured tissues and the clot form a mould in which new tissue forms, the dead tissues and clot being absorbed without any sloughing or suppuration.

Such is very briefly an indication of the sort of reply which I would make to those who oppose the immediate disinfection of wounds and I can never forget that the immediate disinfection of compound fractures was the beginning of Lister's work, and if that had failed, as it is said nowadays that it must fail, Lister's work would have been abandoned. But on the contrary it succeeded beyond expectation, the patients, instead of dying, lived; instead of suffering from septic diseases they remained well; instead of having suppurating and sloughing wounds, the latter became filled with bloodclot which became firmly attached to the sides of the wound and underwent organization into fibrous tissues. This success led Lister to extend his work to operation wounds, with the result that the practice of surgery was completely revolutionized.

My activities since the commencement of the war have been directed mainly to this matter with comparatively little success in persuading others to use antiseptics until lately when the hypochlorites came into use as the result of the success attained by

Carrel. At first I began by advising the use of the methods which I had employed in civil practice; the disinfection of the skin with carbolic acid, the opening up of the wound in all its recesses, cutting away all soiled or badly injured tissues, removal of foreign bodies and then the thoro application of Lister's strong mixture (1-20 carbolic lotion containing 1/500th part of bichloride of mercury), or where parts were badly soiled, applying undiluted carbolic acid as was done by Lister in his first experiments.

Further consideration of the war problem, however, showed me that these methods would not suffice. As a matter of fact a solution of carbolic acid will not kill spore-bearing bacteria quickly, so that such a bacterium as the tetanus bacillus might escape destruction altogether. On the other hand, if carbolic acid or other antiseptic can act long enough they will kill the spores and therefore it seemed to me that we must provide a store of an antiseptic so that constant action might go on till all the bacteria were killed. The second point which struck me was that, seeing that bacteria might be embedded in the tissues and not only lie on the surface, it would be necessary that the substance should diffuse into the tissues and this led me to study the diffusion of antiseptics in bloodclot, dead tissue and other albuminous materials with very interesting results some of which have not yet been published.

So far as I am aware this was the first attempt to have a store of an antiseptic in the wound so as to keep up a continuous disinfection or to suggest that antiseptics might diffuse thru the bloodclot in a wound or even into the tissues in the wall of a wound and so inhibit the growth of the bacteria therein contained and either kill

them by their continued action or weaken them so that they are more easily destroyed by the protective agencies of the body and the refusal to test these points in practice was founded partly on the results obtained by the use of former methods in which these two principles did not play an essential part and partly on theoretical objection.¹

My first aim was to tide over the time between the infliction of the wound and the arrival of the patient at the dressing station. For this purpose I proposed to provide the soldiers and the orderlies with compressible tin tubes, similar to tubes used for various ointments containing a soft paste of lanolin, 20% cresol in wax. Lately I have altered the prescription and now use 83% lanolin, 2% of bees wax and 15% of cresol. The tubes are provided with specially long nozzles. Of course other antiseptics in paste form can be used in a similar manner. After being wounded, the patient himself, one of his companions, a hospital orderly or the medical man, if present, should push the nozzle of the tube as far into the wound as possible, move it about and squeeze small quantities of the paste into the wound in various directions. In this suggestion there was, at first, no idea of *disinfecting* the wound thoroly at the time, it was only a temporary expedient, the hope being that the cresol would diffuse thru the bloodclot which forms in the wound and also thru the damaged tissues and delay bacterial growth, or even, in favorable cases, destroy the bacteria as we had proved it to do in bloodclot and dead

tissues outside the living body. In this way we might hope that the growth of the bacteria would be markedly delayed for some hours at least and that indeed a good many of them would be killed, but it had not occurred to me that such an application of these pastes on the field of battle was to be looked on as a complete method of disinfecting wounds. True, it was possible that a certain number of small, fully open, superficial wounds might actually be disinfected in this way by the first application, and this has indeed proved to be the case in some instances, but that was not what I expected in the great majority of the cases. It also seemed to me that something of this kind would be of great service where there was a great rush of cases; after arrival at the dressing station the minor cases might have some paste injected into their wounds temporarily so as to delay the growth of the bacteria while they were waiting their turn for more thoroly disinfection, the grave cases being of course dealt with first.

As regards complete disinfection I advised that when the patient reached the dressing station the wound should then be opened up so that all the recesses were exposed, the paste removed and the wound disinfected as thoroly as possible. After opening up the wound, cleansing it and removing soiled tissues the materials which I have finally recommended for disinfection are first of all a powder composed of equal parts of salicylic acid and boric acid (which we speak of shortly as "borsal") which is thoroly rubbed into the whole surface of the wound, followed by the introduction of the cresol paste spoken of above. We found that borsal was a very powerful antiseptic against gas gangrene and tetanus bacilli; guinea pigs infected with earth con-

¹ This work was carried out by a commission appointed by the Director-General of the Naval Medical Service and an account of it will be found in the *Journal of the Naval Medical Service* for April, 1915, and also in various other publications which I have made.

taining gas gangrene and tetanus bacilli in large quantities showing no signs of these diseases, or indeed of suppuration if the wounds were treated by borsal and cresol, and recovering without any bad symptoms. On the other hand the control animals and those treated with various other antiseptics such as carbolic acid or cresol paste alone, died of these two diseases (gas gangrene and tetanus). A certain number of war wounds have been treated on these lines with most satisfactory results, but they were looked after by men who had adopted the above ideas and were experienced in antiseptic methods. Unfortunately, when the suggestion was first published it was tried at the front without the point being grasped that the cresol paste by itself was only a very temporary expedient. Cresol paste was squeezed into wounds which were for the most part already septic, no care being taken to open up the wound and get it into all the recesses of the wound and no borsal being used. These cases arrived at the base several days later without any change of dressing and in several instances the results were naturally not satisfactory. The paste, as a rule, had not extended far into the wound but remained near the orifice, mixed with the bloodclot which, being apparently aseptic at that part, became adherent to the sides of the wound and prevented the escape of the discharges. As a consequence, in some cases abscesses formed in the deeper parts, in others gas gangrene developed, while some cases which were doing well were not recognized as satisfactory because the surgeons and bacteriologists concerned were not familiar with healing of wounds by bloodclot. The result was that, without any further investigation of the matter, or without paying any attention to the excellent results which

were obtained elsewhere, an order was issued by the medical authorities that no pastes were in future to be used. Borsal also shared in the condemnation altho none of the cases had been treated by it.

I mention these facts more fully because I hope that if America should enter into the war some further attempt will be made at rapid and early disinfection of wounds and that the matter will be approached with an open mind. Personally I believe that in discarding borsal and cresol paste, used in the manner recommended by me, the army medical authorities have thrown away a most valuable method of treatment and one which would have been of great service to the wounded soldiers. As I have said before, however, it may develop that flavine will take the place of these and all other antiseptics.

In 1915 publications were made almost simultaneously by Professor Lorrain Smith and his coadjutors on hypochlorous acid as an antiseptic and by Dr. Dakin on the hypochlorites; the latter had already been pretty extensively tried by Carrel. As far as I can gather the results are very much the same with either of these solutions and are quite good. My own experience is limited to Dakin's solution of the hypochlorites used in the manner introduced by Carrel. I am not proposing in this paper to go into details, but, as is well known, Carrel aims at keeping up continuous action of the antiseptic by letting the fluid run into the wound every two hours and having some gauze packing lying in the wound to receive it. In this way, altho he is using a fluid, there is a more or less continuous store of the antiseptic in the wound. The results are on the whole very good, especially in cases which come under treatment within the first twelve hours, *i. e.*,

before serious sepsis has set in. Of course in these as in all cases where antiseptics are employed the recesses of the wound must be thoroly opened up, so that the antiseptic can reach every part. Where sepsis is already established the hypochlorite gradually gains the mastery over the bacteria reducing their numbers in a few days till ultimately in some cases the wound may be closed and immediate healing occur. The hypochlorites used in this way are a very important addition to our resources but I must say I am not altogether satisfied with them especially in the later stages where sepsis is firmly established.

Apart from the hypochlorites, other antiseptics, such as permanganate of potash, peroxide of hydrogen, borsal, malachite green, etc., may be of use in the later stages especially if applied more or less continuously. Lately Mr. Rutherford Morison has introduced a paste of bismuth, iodoform and paraffin which is favorably spoken of. I may also say that excision of the whole wound without the use of any antiseptic is advocated by some, but the reports of the results are very various and I should think that it is only in a few cases that one could expect complete success.

The great difficulty in obtaining any definite conclusion about the efficacy of the different methods of treatment is the way in which the patient is passed rapidly from hand to hand till he reaches the base. The result is that after leaving the dressing station the next surgeon into whose hands he falls may change the treatment according to his own ideas and so it goes on till by the time that he arrives at his ultimate destination his treatment may have been altered several times, and in all probability his wound, even if aseptic at first, has become septic. This is of course fatal

to good work and it seems to me that it can only be remedied in one of two ways or in both combined. The best would be not to send back the serious cases till they are practically well, but to keep them in a hospital as far advanced as is safe. If, however, this were done to any great extent, the hospital would become over-crowded and a deadlock would occur tho of course this may be overcome by establishing larger hospitals or more of them. Hence, altho bad cases might possibly be retained longer than they are at present, they must go back towards the base before healing is complete. Now, in order to keep up the continuity of treatment I think there should be a team of men from the advanced hospital to the base, all acting under the instructions of the head surgeon, all trained in one method and carrying out the mode of treatment initiated at the dressing station right down to and at the base. I conceive a surgeon in chief with his assistants of various degrees of experience. Some of the most experienced are at the dressing stations, of which there might be several under one control; from there the patients would be conveyed to one advanced hospital where the same line of treatment would be applied and the worst cases retained as long as possible. From this hospital there would be a line of transit staffed by the same team to a large hospital at the base, where the patients would still be treated on the same lines. In this way different lines of treatment could be tested and compared in a thoro manner. One thing I would say: don't have consulting surgeons, they are worse than useless. The head of the team must be an operating surgeon and must know and organize the work of his team, but he must not poke his nose into other people's work. To have leading surgeons

as consultants who are not supposed to operate or take charge of cases unless specially asked to do so is an absolute waste of first class material. These leading surgeons should run the whole of their own show.

Before concluding there is another matter which deserves investigation. The worst septic cases are those in which clothing has been carried into the wound and its presence has not been recognized. With regard to this matter Surgeon Willan, R. N. V. R. made two excellent suggestions in the *Lancet* last autumn which should be worked out. The one was to combine in the cloth of the uniform a substance which was opaque to X-ray, so that clothing could be recognized in a skiagram, and the second was to impregnate the clothing with an antiseptic which would make the clothing a store of antiseptic, so that it not only would not cause more sepsis but might be a source of gradual disinfection of the wounds. Such an investigation would need to be made by cloth manufacturers, chemists and bacteriologists combined.

Bronchitis.—Fyfe (*Eclectic Med. Jour.*, Apr., 1917) says that in some cases of chronic bronchitis *Ceanothus Americanus* has given gratifying results. It is especially indicated when there is a very profuse secretion.

Office Tonsillectomies.—The practice of performing tonsillectomy, adenoidectomy or submucous resection of the nasal septum in the office is a risky one and should be condemned. These are not trifling procedures, they are not free from danger, and the patient is entitled to the proper environment for their performance and after-care.

THE DENTAL NEEDS OF THE SOLDIER.

BY

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The outbreak of war found the British army but ill prepared to deal with its dental needs. A few dentists held temporary commissions, affiliated to the Royal Army Medical Corps—and they were far too few to deal with the needs even of that small army. During the enlistment of “the first hundred thousand” large numbers of men were rejected solely on account of teeth. The dangers of teeth were at least appreciated, but no means existed to deal with them. In these circumstances dentists throughout the country gave freely of their skill and material to equip men otherwise eligible for the army. As numbers increased the higher medical command of the army took action. Civilian dental practitioners were appointed to attend the troops of particular districts—filling, extracting, and making dentures at fixed rates; curiously enough scaling was left to the caprice of the individual practitioner. Dental lieutenants were commissioned and sent to various base hospitals and dressing stations in France equipped both for operative and mechanical work. Later dental lieutenants similarly equipped were sent to the British forces operating in other parts—Egypt, Mesopotamia, the Balkan Peninsula. To their great credit, and largely perhaps owing to U. S. A. influence, the colonial forces were provided with dental officers as part of their original organization.

A large proportion of the younger dentists are now serving the needs of the armed forces, working chiefly on the all-important spade-work of the profession—

scaling, fillings, extraction of septic teeth, making of dentures. In London spacious premises are in occupation of the army dentists. Here amalgam fillings are favored even in front teeth, since they are durable and always replacable if desired later; septic teeth and roots are generally extracted, tho considering the overwhelming nature of the work a large number of dead teeth are for special reasons preserved; and where possible vulcanite is used for dentures. The press of work is illustrated by the following figures, which are taken from the monthly returns of a London center

Number of dentists	7
Number of mechanics	14
Number of patients	2,407
Number of attendances	3,876
Number of extractions	2,949

Of these 1,156 with local anesthesia, 69 with general.

Number of fillings	1,783
Number of root treatments	463
Number of sealings	333
Number of dentures supplied	582
Number of dentures repaired	53
Number of general surgical cases..	14

and the records contain an exact account of the work done for each man seen. Similar work is done in France where in one month 1,500 to 1,800 dentures are turned out at one base hospital alone.

The work is arduous, but it has its compensations. I have been told by more than one commanding officer that the health of his men was visibly better as a result of the dental treatment. It brings its advantage, too, in the event of jaw injury, where the absence of septic roots and tartar coated teeth materially diminishes the extent of sepsis.

In this latter sphere, jaw injuries, we have been at a disadvantage in England as compared with the men working at the base hospitals in France. The American Dental Units with their splendid equipment and highly skilled and enthusiastic personnel for

a long time got all the jaw work—and splendid work they did and are doing, thinking always of the patient, careful of the minutest detail, sparing themselves in nothing. After a time cases began to come home, many in need of continuation of treatment. A special jaw center was then created near Croyden, one of the southern suburbs of London. Mr. J. F. Colyer was appointed Honorary Consulting Dental Surgeon, and special use is made of this jaw center for the instruction of dental lieutenants. Later this was followed by the creation of three other jaw centers in the London metropolitan area, and more are being organized in other parts of the kingdom. Perhaps some 600 cases are always under treatment in the London area.

As concerns treatment of fractured jaws there are two schools. The one aims at the preservation of teeth and the attainment of a good dental occlusion; the other aims first at the eradication of sepsis and the obtaining of bony union of the fragments. The claims of these schools to establish a rule of practice are well worth a few moments' attention.

The first school, conserving the teeth, has to acknowledge a considerable number of failures to obtain bony union; the second school has hardly a failure where there is bone to unite, but discards teeth freely. The choice, then, seems to lie between a good dental occlusion for a shorter or longer span of years (the teeth themselves of these patients have no more sure expectation of life than those of other people and are further handicapped by bridges and appliances used to perfect the articulation and secure fragments of the jaw) with a possible fibrous union of fragments, and bony union with loss of teeth. When the Croyden jaw center was first opened there

was a very large number of cases of old-standing ununited fractures of the jaw among the patients.

On examining these cases with X-rays it was found that there were nearly always lines of fracture radiating, sometimes a very long way, from what clinically was the "fracture." On extracting all teeth at the site of "fracture" or reaching the radiating lines of fracture, these cases became united by bone. Sepsis partly from dead pulps, but more widely from "periodontal" infection (infection along the alveolar-dental membrane) had prevented bony union. The deduction is that absolute dental asepsis (absence of teeth is the only absolute means of dental asepsis) is necessary to ensure bony union. It is of no use to point to percentage of success—each case must be treated on its own merits and given its own best chance of success (and I presume it is agreed that an ununited fracture is not a success).

Here I shall make my serious criticism of those who work for the "perfect articulation." They do not seem to me to have a full realization of dental sepsis. I have seen many of their successes and some of their failures, but in none have I been satisfied with their dental asepsis. Perhaps, if time allowed, a more minute attention to dental asepsis, especially of the neck of the tooth where the gum edge surrounds and overlaps it, would result in both bony union and saving of teeth.

Those who desire, before all, bony union will be interested in another suggestion by Mr. Colyer. Where there is loss in the continuity of one or other side of the horizontal ramus of the mandible he extracts the teeth of the hinder fragment, thus allowing it to be tilted upwards by the elevator muscles. This tilting often suffices

to bring it into contact with the hinder end of the anterior fragment; where this is not the case the anterior fragment can be brought around to meet it. The posterior fragment must be locked or engaged externally to the anterior fragment, otherwise it will be pulled inwards by the superior constrictor muscle and bony contact will be destroyed. Later any undue deviation to the injured side can be corrected by forcible stretching under an anesthetic, the patient's muscular efforts, voluntary and in mastication, being sufficient to maintain the new position.

As regards splints, the general tendency here is to use struck metal caps soldered together in the case of "interdental" splinting. They seem to me the least septic form of splint yet devised.

"First aid" jaw splinting does not seem to me a very successful proceeding. In the press of work following an engagement no accurate diagnosis is possible and the use of X-rays is probably out of the question. There is also no certainty that the temporarily splinted case, with all the uncertainties that the word "temporary" involves, may not be delayed en route and perhaps the splint regarded as the final treatment. I have seen cases, which, tho fractured, could well have been left alone as regards splinting, arrive in England, after longer or shorter detention en route, in a deplorable condition due very largely to indiscriminate splinting, which had greatly increased the septic conditions of the mouth.

At the special jaw centers the dietary is graded from liquid to "full" diet, and so arranged as gradually to lead the patient to greater exercise of his jaws. Ambulant cases are encouraged to get out into the fresh air, walking or playing football or other games. Under this regime, at the

Croyden center, where teeth are freely extracted the general health of the men is excellent, their complexions pink, and their weight maintained or increased even on long-continued fluid-diet.

To me this result is especially interesting confirming as it does my contention that in our present civilization teeth are not indispensable to healthy life; that septic teeth are the enemy, not absence of teeth.

Bone-grafting seems not to have been always successful. I am inclined to think that as little of the hard cortical part of a bone as possible should be used and that the graft should not be thick. We want living osteoclasts easily accessible to the lymph of the host. Osteoclasts are most plentiful on the bone surface of periosteum and in freely medullated bone: cortical bone is dead tissue except for its minute blood and lymph canals. Hence I think a half section of rib with the periosteum freely scored to the bone is likely to form the best graft, and in placing it in position there should be no attempt to wedge it firmly in, it should rather just lie in contact with the bone of the host since pressure will certainly kill all bone cells in the area of contact. In place of grafting it seems to me it should sometimes be possible to loosen and turn a piece of the patient's own jaw bone into the gap leaving it a vital connection thru the periosteum. In some cases where loss of bone is slight, it should be possible to stretch the naturally forming callus by means of easily contrived dental apparatus.

In considering the advisability of bone grafting it has to be remembered that no operation can be undertaken till the parts are soundly healed and by that time the patient's opinion has become an important factor. Especially in cases where the loss of bone has been confined to one side of the

mandible and where there is a good set of upper and lower teeth on the other side, I have seen such good results both as regards appearance and utility that one cannot be surprised if the patient prefers to leave well alone rather than enter on another long term of hospital life. Whether when the teeth are lost, and daily stretching becomes difficult, the scar tissue will reassert itself and contract, remains yet to be seen. The period of comfort may last many years, depending chiefly on whether the patient be properly taught to clean his teeth, and the question of operation becomes akin to a question of insurance.

The "plastic" cases which reach us are chiefly dealt with by Capt. Gillies, R. A. M. C. at Aldershot. There are about 250 beds collected in one hospital. Many of these cases are of a very chronic nature, requiring prolonged watching and many minor operations to eradicate sepsis and especially necrotic fragments of bone. It is therefore proposed further to segregate the ambulant cases in a farm hospital where the men may find relief from the tedium of hospital routine in useful work. Very excellent work is being done at this center and valuable lessons learned in the technic of plastic operations. The length of time which elapses before the plastic work can be done allows of abundant formation of scar tissue. It is found that this must be completely eradicated from the area of operation to ensure its success. The dentist works here, in conjunction with the surgeon to secure from the beginning the best possible position of bone fragments and to provide at the time of operation a solid base to support flaps used to form lips or chin. It is hoped that a large amount of useful information will be published as the result of so much plastic work. Most

interesting cases are always to be seen including some in which both bone and soft parts of the chin have been carried away. One such case was fortunate in possessing a molar in each side of his mandibular remnants. Over a vulcanite frame attached to these teeth a very fair chin had been formed, by a sliding operation, from the skin of the neck. The next step will be to form a lip from a cheek flap. There are as yet no cases of arm to face grafting to be reported.

THE WORK OF THE RADIOLOGIST IN CONNECTION WITH WAR SURGERY: WITH ESPECIAL REFERENCE TO FLUORESCENT SCREEN LOCALIZATION BY THE PARALLAX METHOD.

BY

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The energies of all radiologists have been diverted to serve the requirements of the surgeons engaged in the treatment of war injuries. A small, though important, part of the radiologist's work consists in the formal localization of bullets and fragments of shell.

The principles of exact localization were first enunciated by Sir James Mackenzie Davidson. These principles, and the methods of applying them, have been known and thoroly understood for many years. It is somewhat surprising, therefore, that most radiologists have found it necessary to devise special appliances for carrying out their

localization. The object which has prompted the introduction of these various localizers has been, in most cases, to save time. Nearly all time-saving devices have entailed loss of accuracy, and the inventive genius of many radiologists has been applied to the problem of gaining time with the least loss of accuracy of result. To attain rapidity in localization it is essential that the method adopted fits in with the general arrangements used by the radiologist in his X-ray examinations.

The small apparatus which I have introduced was designed by me with this object. My localizer is intended for use with the fluorescent screen and cannot be used in any other way. Hence it is necessary, before describing the apparatus, to give a brief account of my method in carrying out X-ray examination in war injuries. I cannot do better than quote from a recent contribution to the *Archives of Radiology and Electrotherapy*, November, 1915.

The essentials of the method are:—

1. A couch with a tightly stretched canvas top (or a wooden top).
2. A thoroly protective tube-box with an adjustable rectangular diaphragm and a convenient method of moving the tube-box in a horizontal plane in the longitudinal and transverse direction of the couch. This movement of the tube-box is carried out repeatedly while the tube is excited; hence the necessity for special protection.
3. An arrangement whereby the operator is able to control, by a touch of the foot, both the current thru the X-ray apparatus and the light in the room. A double foot-switch enabling this to be done can be added to any installation.
4. Fluorescent screen work in war injuries involves frequent examinations at

close quarters, and no tube-box is so completely protective as to absorb all X-rays issuing from a tube actuated by a powerful generator; therefore, I consider it necessary for the operator to interpose a lead-lined screen between himself and the couch.



FIG. 1.—Author's lead-lined screen.

The screen I use is of wood, lined on both faces with three-pound lead (*i. e.*, sheet lead weighing three pounds to the square foot). A lead-lined shelf projects from the

top of the screen, and overhangs the near margin of the couch. This shelf protects the wrists and forearms, and is useful as a receptacle for gloves, pencils, etc. (Fig. 1).

5. For the sake of completeness I would mention, as necessary adjuncts, a pair of efficient protective gloves and a pair of protective spectacles. The fluorescent screen must, of course, be covered with lead glass of good quality.

The localizer was made for me by Messrs. Watson, and has been described by them and by myself. Its construction is seen at once by the diagram (Fig. 2). The fluorescent screen is placed horizontally upon the part of the patient under examination. Each upright of the localizer has an adjustable clamp near its upper end. One or both of these is attached to the fluorescent screen so as to keep it in a horizontal plane, and if necessary take the weight of the screen off the patient. In many cases only one upright is used, the opposite side of the screen being allowed to rest on the patient. The upright should, if possible, be on the side nearest the ob-

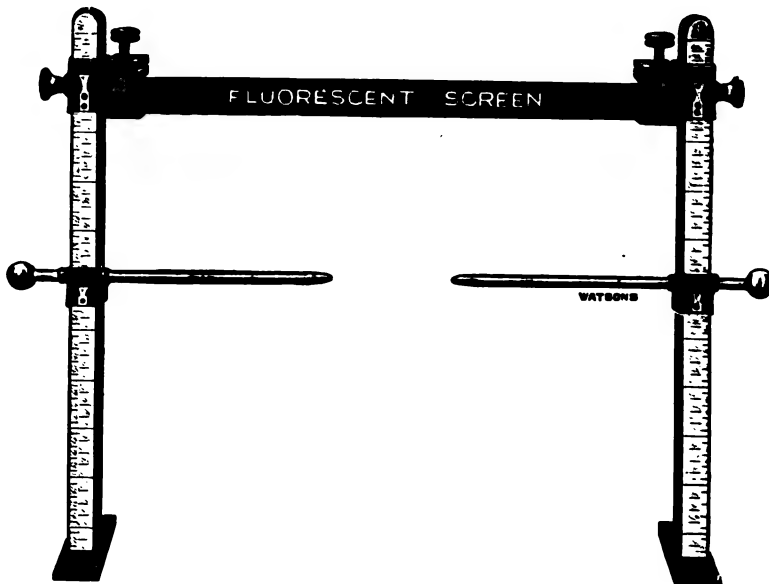


FIG. 2.—Author's Localizer.

server. The metal pointer is inserted into its sleeve (after all other adjustments have been made), and the tube is activated (the light being put out at the same moment by the foot-switch). The screen is so adjusted that the shadow of the pointer is in a straight line with the shadow of the foreign body. The direction of the shadows should be parallel with the side of the rectangular diaphragm of the tube-box. The size of the aperture is adjusted suitably; a little experience will tell the best size. The tube (with its box) is now moved under the couch, and the corresponding movement of the shadows on the screen is observed. If the pointer and the foreign body are at the same depth below the screen, their shadows will move together, and will be in a straight line in all positions of the tube. If the foreign body is deeper than the pointer, its shadow will move more rapidly than that of the pointer; if more superficial, its shadow will move less rapidly; in either case the shadows will get out of the straight line. The pointer is thereupon made to slide up or down the upright as required, and the observation is repeated until, after a few trials, the two shadows (pointer and foreign body) remain in a straight line in all positions of the tube. The pointer is now indicating the exact depth, within the patient, of the foreign body. This depth is simply read off on the scale engraved on the upright of the localizer.

The second pointer is only used occasionally, in small parts (forearm or leg), where very great accuracy is required. The two pointers (see Fig. 2) must be moved up or down together through the same distance. The "clicker" enables this to be done readily, for one can feel each quarter inch as the pointer is moved along the upright. When the adjustment has been properly

made the reading of the two sides is taken and compared; the two readings should, of course, agree, and if the fluorescent screen has been accurately horizontal the readings will agree. The second pointer thus gives an extra means of checking the accuracy of one's observations.

To a careful worker, accustomed to fluorescent screen work, there should be no sources of inaccuracy provided the foreign body be easily visible with a moderate current; otherwise the method is inapplicable. In military work there are few cases in which the foreign body is not readily seen; the chief exceptions are small particles in the orbit and in the dense parts of the skull.

One of the greatest advantages of the fluorescent screen method of localization is that it renders formal localization unnecessary in a large proportion of cases. Many foreign bodies can be felt quite easily, and moved about under the screen, and their position marked at once on the surface of the body. In other cases the screen shows at once whether the foreign body is nearer the front or the back surface of the body or limb. In a recent case a rifle bullet had been localized in France to be six and a half inches behind a point marked on the front of the thorax. I saw at once, by the rapid rate of movement of the bullet's shadow on moving the tube-box, that the bullet was much nearer the posterior than the anterior aspect of the body. Accordingly, the patient was examined lying prone, and the bullet was felt at once as a hard lump in the spinal muscles. The bullet had gone right thru the thorax. The localization made in France was perfectly accurate, but did not give the surgeon the required information. Within the thorax the oblique and the lateral views often clear up the exact situation of a foreign body, and the move-

ments accompanying respiration, the heart beat and the act of swallowing often show the position of the foreign body far more graphically than any method of formal localization or of stereoscopic skiagraphy.

In many parts, notably the limbs, the position of a foreign body may be determined by the screen alone (without using a special apparatus), by examining in two planes at right angles, and making two marks on the skin, one in each plane. My apparatus enables the same two marks to be made on

the shoulder and the neck. Here an apparent difficulty arises in applying the paralax method of localization. In practice, however, the same method can be used. Take the shoulder, for instance, and suppose the patient lying on his back on the couch. His head is turned away from the injured shoulder, and the screen is allowed to rest by one margin on the chest (Fig. 3). The opposite margin of the screen is supported by the localizer so that the screen is horizontal. With a small opening the an-

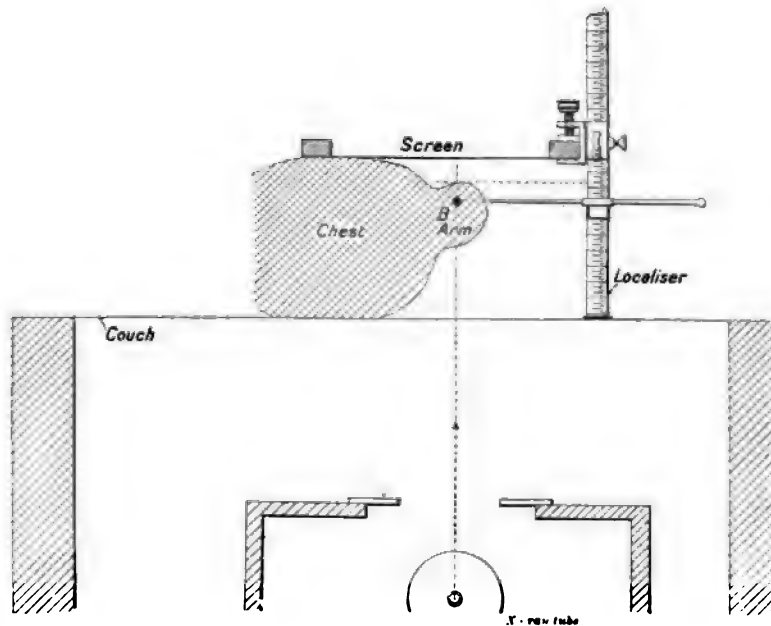


FIG. 3.—Localization of Foreign Body in the Shoulder. B—Foreign Body.

the patient's skin when he cannot be moved. The anterior mark is made in the usual manner. My localizer is then adjusted so that the pointer indicates the depth of the foreign body. The point is thrust in till it touches the skin. This is the spot for the required mark in the plane at right angles.

There are parts of the body where a fluorescent screen of the usual size cannot be placed in contact with the skin—notably

terior mark is made in the usual way, the space between the skin and the screen making no difference. Then the depth of the foreign body below the screen is ascertained in the usual way by means of my localizer, and is marked on the outer side of the shoulder. Thus we get the position of the foreign body in two planes at right angles to one another. If we require the actual depth below the anterior surface of the shoulder we can read it off on the up-

right of the localizer by holding a small straight-edge horizontally in contact with the mark on the front of the shoulder.

Another method of obtaining this depth is to place a small metal object on the anterior spot, and to ascertain its depth below screen by the means of the localizer. The depth of the foreign body from the skin is then obtained by subtraction.

In conclusion, my experience leads me to believe that there are very few cases in which the localization of foreign bodies cannot be carried out accurately and quickly by the parallax method, with the fluorescent screen alone, while further, the screen examination renders formal localization unnecessary in many cases.

TUBERCULOSIS AND THE FIGHTING FORCES OF AMERICA.

BY

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The tuberculosis death-rate in the army is stated to be 4.72 per 1,000, or twice that for the British army in times of peace,¹ while the total deaths and discharges from this disease in the navy were 3.072 in the decennium ending 1905² as against 2.2 per 1,000 in the British navy for the five years ending 1912.³ The causes of this higher rate are too complex to be considered in

this paper, and it is probable that they are similar to those which produce a higher rate in the general population of the United States. It is certain that the increase in the personnel of the army and navy will increase the actual number of cases. This will not necessarily imply that tuberculosis is increasing in the services, since a large number of cases will be incidental to recruiting.

Tuberculosis means a double loss. The full return is not received for money expended on training, and the disease is a drain on the pension funds. There is moreover another side to the question. The personnel of the services is composed of men who have left civil life for a number of years to live under other conditions and laws. Every year these men are returned to civil life, bringing with them qualities of discipline, intelligence, accuracy and endurance. All these are a gain to the civil community. If therefore a man proves unfit for the services owing to tuberculosis, it is in the national interest that he be returned to civil life whilst the disease is still amenable to treatment. He has a chance of recovery and of proving a useful citizen under conditions favorable to his health. Now the prospect of recovery falls in the inverse ratio of a square as the disease advances.

If men are invalided out with advanced disease it means that they return to their homes as hopeless cases, for which little or nothing can be done by their friends, or by the Federal or State authorities. This alone justifies a plea for the earliest diagnosis of the malady. The services would be free of the man before he had infected others and thus spread the disease. The civil community benefits in that the man stands a better chance of becoming a wage

¹Lawrason Brown. *Control and Eradication of Tuberculosis. A Series of International Studies.* Edited by Halliday Sutherland, 1911, page 258.

²J. D. Gatewood. *Naval Hygiene*, 1909, page 48.

³Report of the Health of the Navy, 1913.

earner. Again the services would benefit from reduced claims on the pension funds, since suitable treatment is usually followed by the arrest of early disease.

Detection of Tuberculosis in the Services.—The less obvious signs of pulmonary disease are not easily detected. Yet once a man has been accepted, after medical examination, for the services, it must be presumed that he was free of tuberculous disease on entry. In ordinary circumstances when a man develops pulmonary tuberculosis some time later, it is impossible with justice to attribute the disease to some constitutional defect not detected at the time of entry. Nor is it possible to argue that had the man remained in civil life the disease must have inevitably developed. The benefit of the doubt should go to the patient.

It thus seems desirable that special attention be paid to the lungs by medical officers examining men for entry, and that in cases of doubt the man be referred for further examination by experts, whose services should be available. The earliest detection of pulmonary tuberculosis is only possible by the more recent methods of clinical and biological diagnosis. This is a further reason for the employment of experts in the services. Yet even if those advantages be granted, certain difficulties are likely to arise. These I wish to anticipate and if possible to suggest the lines on which they might be met.

Treatment.—The Navy Department in 1908 established its sanatorium of 154 beds at New Fort Lyon, Las Animas, Colorado. All tuberculous officers and men of the navy and marine corps are transferred here as soon as the disease has been diagnosed. The army sanatorium of 400 beds is at Fort Bayard, New Mexico. "The bene-

ficiaries (really pensioners) are free to leave and to return at their pleasure, but usually do return in the greatest numbers when too ill to work. All patients with pulmonary tuberculosis in the army, regardless of their condition, are admitted, and many who first fall ill at a remote station in the tropics are admitted in a hopeless condition." "The results of treatment have been published in detail and are excellent."¹

It seems doubtful whether the existing sanatorium accommodation at the disposal of the Army and Navy Medical Services will be sufficient to meet the needs of the greater army and navy. Should it prove insufficient the Medical Departments might increase the number of their beds at the expense of the Federal Government. On the other hand the primary duty of the army and navy medical services is to augment and maintain the efficiency of those on the active list. Thus the extension of service sanatoriums, with medical officers and staff specially trained in the treatment of tuberculosis, might be opposed on the ground that it is not immediately concerned with their principal work. Again it is generally agreed that tuberculous patients with few exceptions should not be returned to duty.

All cases are not suitable for sanatorium treatment, and other agencies working in harmony are required for the control and eradication of tuberculosis. The Edinburgh System created by Sir Robert Philip in 1887 and well known in America, comprises the Tuberculosis Dispensary, The Sanatorium, the Open Air School for infected children, the Farm Colony, and the Hospital for Advanced Cases. It seems improbable that the army and navy could work this system among themselves, and

¹ Lawrason Brown. Loc. Cit., p. 259.

since the system is indispensable for the efficient treatment of tuberculosis it may be that the services will cooperate in some way with those States in which all the machinery is already in operation.

Whatever scheme be adopted the human factor should be considered, lest the best laid plans go wrong. A man with early disease and discharged from the services may refuse to take advantage of the facilities for treatment provided by the Federal Government. He is unable to do a full day's work and may be entitled to a pension. As he is able to do a little light work the wages earned, together with his pension, enable him to live at home and to have more money than if he went to a sanatorium as a pensioner. So the patient lives at home, does not trouble about treatment, and the disease gradually advances. After a time he is unable to work. The end result is a waste of life, since he has lost his own and has probably infected other members of his family, and a waste of money, since any pension granted has achieved no useful purpose.

The difficulty might be met by granting to every man diagnosed as tuberculous three or six months suitable treatment, at the expense of the Federal Government, prior to discharge and whilst he is still on full pay. The objection may be raised that it is impossible to treat a man under military discipline at a State sanatorium, in the event of the latter scheme being adopted, but the difficulty is not insurmountable. If the patient misbehaved or failed to carry out the rules of the sanatorium in which he had been placed by the Government, he could be immediately discharged from the service on the ground of having refused treatment. The great majority would ac-

cept this treatment loyally, and having seen its advantages would be more likely to place themselves, if necessary, in the hands of the tuberculosis authorities and agencies in their own State, once treatment at the expense of the Government had expired.

Suggestions.—These difficulties in front of the American army and navy may be met by the provision of special machinery, and the keystone of success is the employment of experts at their own work. I make the following suggestions with the knowledge that any advance in the treatment of disease has always received the most generous recognition at the hands of our great Ally.

(1) A branch of the Medical Departments of the Army and Navy might be devoted to the control of tuberculosis in the services, and all clinical work in these departments would be carried out by experts.

(2) A "Tuberculosis Sheet" could be prepared for every case of this nature, and on the details therein it would be possible to determine what form of treatment should be granted at the expense of the Government whilst the man received full pay.

(3) Reports at stated intervals would be forwarded from the sanatorium to the Medical Department concerned. On these reports it would be possible to determine the advisability of extending the treatment at the expense of the Government. It would also be possible to fix the amount of an adequate pension with greater justice than if this were done at the time when the disease was first diagnosed.

(4) There could be the fullest cooperation and exchange of information between the Medical Departments and the Tuberculosis Commissions in the States in which the patients have their homes.

INJURIES OF THE RECTUM RESULTING FROM THE WAR.¹

BY

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Since the beginning of the present war I have seen in the military hospitals a number of cases of injury to the rectum and anus from bullet and shell wounds, and I think my experience of such cases may be of interest, especially when it is compared with that of surgeons attending these cases at the front, for I have naturally seen the patients at a very different stage, and when the indications as regards treatment were quite different. Surgeons at the front see the cases when the wounds are recent, and when the primary consideration is to save life and control successfully the almost inevitable sepsis. Colonel Cuthbert Wallace's paper² is a most valuable contribution to our knowledge from this point of view. The cases I have seen were, for the most part, the results of such wounds as he has described, and at the time when I saw the wounds it was not so much a question of saving life or controlling sepsis as of dealing with the deformity produced by the healing or part-healing of the wounds.

A fact that strikes one particularly in reference to these wounds is that the re-

sults are in many cases very crippling. The size of the wounds (particularly where some portion of the bony pelvis has been struck), coupled with the fact that almost without exception the wounds have suppurated violently, results in fearful cicatrization of the parts, more particularly if the anus is involved. One patient whom I was asked to see had been shot through the buttocks and anal canal. The resulting contraction had so closed up the orifice in dense fibrous tissue that colotomy had to be performed. I think that in cases such as this, where serious contraction of the orifice has occurred, the best treatment is a temporary colotomy, followed by an attempt to resect the fibrous tissue and restore some kind of a functional anus at a later date. When the anus is completely destroyed a permanent colotomy probably gives a better functional result than a perianal anus.

One very interesting case which came under my care was that of a soldier who was hit by one of our own shells during an advance. The rectum had been torn open from the anus backwards for about four inches. When I saw him the wound was healed, but there was a large opening about three inches long into the rectum and including the anus—that is to say, the anus formed the extreme front end of the opening. The mucous membrane was, of course, adherent to the skin. The patient had no control, and had been pensioned out of the army after two unsuccessful attempts had been made to close the opening. I persuaded him to let me make another attempt. First I dissected off the mucous membrane freely for $\frac{3}{4}$ in. all around the wound, together with a fair thickness of tissue. I then sewed up the mucosa with catgut and brought the posterior ends of the sphincter together. Finally I made two flaps of skin

¹ Paper read before the Royal Society of Medicine, Surgical Section, Sub-Section of Proctology, May 10th, 1916.

² "Rectal Wounds in the Present War," by Cuthbert Wallace, Colonel A. M. S., F. R. C. S. (Proceedings of the Royal Society of Medicine, 1916, Vol. IX., pp. 23-25).

by incisions passing backwards and outwards at an angle of 45 degrees from the central line, and starting at the posterior end of the opening. The flaps so formed were freely undercut till they easily met without tension, and were sewn together in the mid-line. A small drain was put in posteriorly, and another into the rectum thru the restored anus. The wound healed well, and the patient left hospital with perfect control about a month after the operation. The secret of a good result in such cases is, I believe, to separate the skin and mucous membrane as much as possible by placing as much tissue between them as can be managed, and to avoid all tension.

No attempt should be made to close wounds of the rectum while there is sepsis. One should wait until healing has occurred before doing any operation to close the opening. I believe, however, that all such openings into the rectum can be closed successfully if sufficient care be taken, always providing that enough of the anal musculature has been left to secure a functional result.

Many bullet wounds of the rectum heal perfectly without causing any serious disability of the rectum, and I have seen cases where a bullet has traversed the rectum from side to side, leaving nothing but a scar which could be felt in the rectal wall. Unfortunately in most cases of this description serious injury to the bladder or other structures in the pelvis has occurred, or sepsis in the surrounding tissues with frequent abscesses gives trouble for months after the rectal wound has healed. I had one case, however, in which the bladder and rectum were shot thru from before backwards without any serious results to either organ, and without any extravasation. The

bullet had emerged close to the right sciatic nerve, and the patient's only trouble was from bad sciatica owing to concussion of this nerve.

I have seen several cases of bullets lodged in the sacrum, and so far they do not seem to have caused any serious trouble. I have always advised against any attempt to remove them. In one case a shrapnel bullet had perforated the sacrum from behind and lodged just behind the rectum without damaging it. With a finger in the rectum one could quite easily feel the bullet half buried in the anterior surface of the sacrum.

I was recently asked to see two cases of bleeding from the rectum in men returned sick from the front, and I think they are worth mentioning. In the first case the history was as follows: The man while at the front had accidentally fallen into a trench and upon a haversack lying at the bottom, which struck him in the left iliac fossa. He was rather shaken by the fall but soon felt all right. About an hour later, however, he suddenly had a desire to have his bowels opened, and passed a large quantity of blood. After this he passed blood on several occasions and was ultimately invalided home. When I saw him he appeared to be in good health except that he occasionally passed blood, the last time he did this being about ten days before I saw him. I examined him under an anesthetic and passed a sigmoidoscope. Nothing whatever could be seen. One could only conclude that there had been some injury to the mucous membrane of the sigmoid from the fall, which had since healed up.

In the other case the patient had been invalided back from the trenches on account of bleeding piles. He had been in hospital

some two or three weeks and had several times been examined without piles having been discovered, or anything else to account for the bleeding. The hemorrhage occurred several times a week when he went to stool. It was never much in quantity, and he seemed to be quite normal in other respects. The most careful examination failed to reveal any internal piles, and it was ultimately discovered that the patient was deliberately injuring himself, apparently with his finger-nail, in order to remain on the sick list.

WAR WORK OF THE ANTITOXIN LABORATORY.

BY

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The problems confronting the military medical services of a country in a time of war, are from the purely medical aspect of two sorts preventive and curative. From a military standpoint these two are combined and are thought of as two phases of the same question. The preventive feature relating to the keeping fit of all enlisted men, and the other side having to do with the return of the wounded at the earliest possible moment to their various units for active service.

The preventive side of military medical work is really the application of the principles of bacteriology and immunity. The Boer War forever crystallized in the minds of the medical officers the significance of this work. Roughly seven thousand men were killed in action or died of wounds in this war, and more than eighty thousand died of diseases. Furthermore these deaths

from disease were practically all preventable.

With the outbreak of the present war, prevention came into its own and preventive medicine has occupied much of the time and attention of the medical officers.

I propose to very briefly outline some of the work which laboratory workers in bacteriology and immunity in Canada have been able to do to mitigate the horrors of war. Recent wars have shown that typhoid fever, bacillary dysentery, paratyphoid fever and cholera can all be controlled by efficient inoculation with the appropriate bacterial vaccine. This was at once undertaken and the laboratories of the Provincial Board of Health of Ontario thru Major J. W. S. McCullough, Chief Officer of Health, began to prepare and supply free of charge all typhoid and paratyphoid vaccine necessary to immunize all the Canadian troops. This involved the preparation of many hundred thousand doses of these substances. The immediate direction was for two years entrusted to Dr. F. W. Schofield, Assistant Bacteriologist of the Provincial Board of Health Laboratories.

Other communicable diseases which could be controlled by proper measures were epidemic cerebro-spinal meningitis, diphtheria, etc., and the dread disease tetanus. For control of these however, biological products are essential. Such biological products include diphtheria antitoxin, tetanus antitoxin and anti-meningitis serum. Of these tetanus antitoxin was in greatest demand.

With the outbreak of war the antitoxin laboratory of the University of Toronto, a laboratory comparable in the scope of its activities to the serum departments of the Pasteur Institute, Paris, the Lister Institute, London and Research Laboratory of

the Health Department of New York City, respectively, undertook to prepare the public health biological products needed for the Canadian forces. These products included tetanus antitoxin, diphtheria antitoxin, anti-meningitis serum, smallpox vaccine, etc. Within a year after the outbreak of the war, Canada was practically able to supply her own needs in this direction, was almost self-supporting in so far as these important substances were concerned.

Very early in the war it was found that practically all the wounded in the Western Theatre of war had infected wounds. Soon also it was discovered that a large number of these infections were caused by the tetanus bacillus. At once there was an enormous demand for tetanus antitoxin. The price of the product went up very much and even then difficulty was experienced in obtaining it. Now so far as the Canadian forces are concerned this is changed, abundant supplies of antitoxin are available and thanks to the elimination of profits in connection with its production, tetanus antitoxin is obtainable at a lower price than ever before.

Epidemic cerebro-spinal meningitis became a serious menace amongst troops in billets and barracks both in England and Canada during the first winter of the war. Much of the anti-meningitis serum available was found to be worthless. The Antitoxin Laboratory of the University of Toronto, with the advice and assistance of the Rockefeller Institute for Medical Research, New York, undertook the preparation of anti-meningitis serum. The serum so prepared has been used in the Canadian Army with conspicuous success.

Smallpox vaccine at the outbreak of war was in considerable demand. The price was quite high. The efforts of the Anti-

toxin Laboratory were then directed towards obtaining for the Government a thoroly satisfactory supply at the lowest possible price. Soon the price was reduced to two-thirds of that at first charged. When it is remembered that several hundred thousand vaccinations have been done, the significance of this will be realized.

These are some of the features of the war work of the Antitoxin Laboratory of the University of Toronto. The one aim has been to produce thoroly satisfactory, public health biological products at the lowest possible price. The war will be won by the Allies because they not only have the men, but every day they are more nearly self-supporting as to supplies of every sort. A modest effort in the direction of aiding in this was the motive actuating those who were responsible for the work this laboratory has done.

Especial thanks are due to Major D. King Smith, who most generously placed the old Ontario Veterinary College premises at the disposal of the University to be used as quarters for the tetanus antitoxin horses until the new University Farm premises were available. Thanks also to the splendid generosity of Colonel Albert Gooderham, the Antitoxin Laboratory now has a farm of fifty acres and most modern and complete laboratories and stables where all of these products can be produced under absolutely ideal conditions. After the war is won, the Antitoxin Laboratory will turn its attention still more in the direction of producing public health biological products which are so necessary in the constant warfare against communicable diseases.

Eczema of the Navel.—An "eczema of the navel" may be due to a discharging umbilical dermoid.—*Exchange*.

ANTI-TYPHOID INOCULATION AMONG SOLDIERS.

BY

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Inoculation against typhoid is compulsory in the Canadian Army and the recognition of its importance is shown by a recent order placing parades for inoculation before purely military ones. It is pointed out that "Any slight interruption in military training necessary from time to time is more than compensated for by the protection afforded by inoculation against typhoid."

While the figures given out from the front regarding the prevalence of typhoid are not readily obtainable yet those already received are conclusive as to the great protective value of inoculation and they also prove its value in the lessened mortality amongst those who have contracted typhoid.

(In the Gallipoli Campaign the large number of cases which developed there were para-typhoid against which there had been no inoculation. For the past year however, a combination of para-typhoid and typhoid vaccine has been used).

The Research Defence Society of England issued a leaflet on the protection against typhoid afforded by inoculation, dated Jan., 1915, in which it reported as follows:—"Among the Expeditionary Force in France and Belgium about 95 per cent. have been protected against typhoid fever, the annual average being about 90 per cent."

"The annual admission ratio per 1,000 is more than nine times greater among non-protected than among the protected. Among the non-protected it is 9.1 per 1,000. Among the protected it is 1 per 1,000. The death

rate is thirty-one times greater among the non-protected, being 1.84 per 1,000, while among the protected it is 0.66 per 1,000."

An official British report states that from August, 1914, to November 10th, 1915, 1,365 cases of typhoid were reported among the British troops in France and Belgium (1,150 verified by laboratory diagnosis). In 570 cases amongst the inoculated there were 35 deaths, while in 571 cases amongst those unprotected by inoculation, there were 115 deaths. Owing to our lack of information regarding the number of inoculated soldiers who contracted typhoid, and those not inoculated who contracted the disease, it is impossible to compare the results, but these figures do show that the mortality is two-thirds less among those inoculated. Another list of figures taken from the report of Dr. Jules Courtmont of France shows that in 1,347 cases of typhoid 891 had not been inoculated, while 225 had been. Of the 891 cases uninoculated there were 155 deaths, making 17.4 per cent. Of the 256 cases inoculated there were only eight deaths, making 3.1 per cent. The mortality amongst those inoculated only once was greater than amongst those inoculated twice, and the mortality amongst those inoculated twice was greater than amongst those inoculated three times.

In reply to a letter for further information however, I have received a letter from the office of the Director of Medical Services of the Canadian Contingents in London stating that "altho the figures are such that they ought materially to help universal inoculation, the War Office refuses to allow any statistics regarding medical work to be published."

The technic used at the Laboratory in District No. 2, Toronto, is to paint a small area beneath the clavicle with tincture iodine.

and, after boiling the needles, syringes and plungers, inject subcutaneously one c. c. of the anti-typhoid vaccine which equals a dose of 500,000,000 dead bacteria. The second dose of the same strength is given from four to ten days later (usually one week), and the third dose of double the strength is given from four to ten days (usually one week) after that, making in all 2,000,000,000 dead bacteria. It is important to have the bottles containing the vaccine well shaken before using, also to have the rubber stoppers painted with iodine before inserting the needles thru them for withdrawing the fluid. Our vaccine is prepared at the Ontario Provincial Laboratory.

The redness and tenderness surrounding the site of inoculation which sometimes supervenes begins to subside in a few hours. As the constitutional reaction comes on about six hours after the inoculation, consisting of malaise, headache, a slight rise of temperature and, in some cases, a tendency to faintness, light duties are advised for the men for 24 hours. When symptoms are severe enough the men are admitted to hospitals under the head of "Inoculation Fever." The usual time spent there has been from one to three days, with an occasional illness lasting five days or a week.

We have inoculated in District No. 2, between January 1st, 1915, and January 1st, 1917, 58,382 men three times each, making in all 175,146 inoculations. We have had no deaths from these and, while there have been a number of somewhat severe reactions, there have been admitted to hospital for this cause only 117 cases—less than one-quarter per cent. of the men inoculated, or about one admission in every twelve hundred inoculations, a record which should remove any fears regarding, at least, any immediate danger from inoculation for

those who are in good health; and while doubtless later on there will be numerous maladies attributed by the soldiers to inoculation, as yet we have failed to observe any serious results.

THE NEUROSES OF RETURNED SOLDIERS.

BY

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The most striking feature in the nervous disorders of the soldiers, who have been returned to this district, is the fact that the same symptoms repeat themselves with a persistency in case after case, until one feels that the regularity almost tends to monotony, and the impression is gradually arrived at, that there is a parallel tendency amongst all mankind to react to shock in the same way.

The cause of these neuroses in the great majority of cases, has been the explosion of shells in the immediate neighborhood of the affected soldier, and the belief is apparently well grounded that the vibrations, produced by these explosions, are the immediate cause of a disturbance in the physiological integrity of the nervous system.

It is interesting to note here that the men so affected may have been well seasoned to war's terrors by long campaigning, and that they have been frequently those who were considered to be the owners of good healthy nerves. Yet on the other hand many who are similarly exposed escape, and one officer has explained this by stating that he believes that there are differences in the resulting degree of vibrations, produced by different shells.

A second group of cases are those who have been buried alive by the shell explosion, and the cause is evidently parallel with the first.

A third group have been exposed to much fighting and have been for some time under fire, and may have had several temporary trips to the hospital, from milder attacks, but have finally under the continued strain become shell shock victims, and been forced to return to their home.

Finally there are those who have been exposed to little trench strain, but who may be said to be more psychical, than true traumatic examples of the disorder.

It is interesting to compare the two sides of this question, as they must have a great influence on the question of legal damages in the ordinary civil cases of our courts in the future.

Is this traumatic group of neuroses due to psychical or physical cause? Is it due to mental fears, or to vibration from shell explosion?

From the psychical standpoint, if you consider the effect of the tremendous explosion, and the combination of noise, and the scenes of terror, and the fear that death and destruction of usefulness are suddenly at hand, it appears easy to say, it is psychical in origin.

On the other side you have the knowledge that shell explosion is tremendous in its force, and you know that most of these men are fearless and well trained and accustomed to the battle field.

The theorist, from at home, says a great deal about the psychical side, the Freudist can indulge in a well developed line of analysis; but so far, in my discussions with the real medical officers who have served at the front, this answer has come to my query, "*That the cause is vibration and*

direct shock." And this opinion I believe is correct for the first two groups. Of course, in the third and fourth classes there are the true psychically produced cases, either due on the one hand to the prolonged mental strain or on the other to fear, but I do not yet know the proportion of these latter to the true traumatics, but I think it is comparatively small in the Allied army.

The question of nervous inheritance has been stated by many observers to be at the root of these cases, but I fail to agree from my own experience. No doubt in regard to the true mental cases (the insanities) this is true, and to cases of dementia praecox, becoming definitely developed while under military service, and also to such psychically produced cases as have broken down in less active warfare; but on the contrary, in the true traumatic cases I have failed to obtain such a history of original or inherited nervous disorder, and if the theory of vibration is correct, surely the other idea is not at all a necessary adjunct.

The symptoms that are apparent in a typical shock case are those of increased irritability of the nervous system, and are usually more or less generalized thruout the whole cerebro-spinal-sympathetic axis. In other cases the complaint is more or less localized to one or more districts, as for instance the cardiac. The usual type has a fine tremor of the hands, this being the cardinal symptom of many cases, and one which may last for months and months, and to this is added over and over again the annoying complaint of sweating. I do not think one realized before the war how important this sweating complaint was in traumatic cases, but when one sees little pools of water trickling from the body of a shock victim, and sees the same annoying sign, time and time again, one recognizes

that it must not be passed over in future as a minor ailment.

This trembling, sweating man will then tell you, that at the least excitement, he gets very nervous, that he does not sleep well, and that he feels he will never be good for work again, especially any work above the ground level, and that he gets little dizzy attacks very easily, and if you stop right there, you have in a nutshell the cardinal symptoms of nearly every shock case; in fact these are the complaints, we hear over and over again, and they are the last disturbances to leave and the hardest to cure.

Considering now more in detail the various signs of increased irritability, one may think first of the psychical.

Sleep, God's most glorious gift to man is usually greatly affected and while it is seldom lost entirely, yet it is frequently difficult to obtain, and broken by dreams, or only obtained for a part of the night. The dreams are usually distressing and in many cases are reproductions of terrible experiences in the trenches, and wake the man up in a condition of terror with profuse sweating.

The memory of these soldiers is always poor, and from the term poor one may pass to the more serious cases, and say very bad indeed. The men complain of this a great deal, as it is a defect that shows in their retaining new work in civil life.

When one turns to the disturbances in perception, one sees the most marked differences compared with the cases that one meets in civil practice. It is in very few cases that I have seen these men complain of their viscera, with the exception of the heart (to which reference will be made later) and if you contrast this absence of visceral consciousness with the citizen with his pages of complaints about his bowels,

and his stomach and his kidneys,—the difference is striking.

But this same feature of a lack of increased perception applies also to his mental working, as there is not the same introspection of thoughts and ideas that one meets with in the civil class, and finally in regard to those psychasthenic fears that neurologists meet each day in practice, they again are singularly absent, unless one includes the one main fear "We will not be able to work as before again."

Along two forms of sensation, however, they do show a great increase in perceptive irritability, and those are sight and hearing, as they complain of reading tiring their eyes and causing aching, and of the little resistance that they have to sound.

In regard to their associative faculties I have already shown the main characteristic, and that is the increased excitability. To talk is no longer pleasure as the least little excitement makes them so nervous, and they say their chief pleasure is to stay quietly at home, and off by themselves, and be quiet. Rest, rest and yet most rest.

I have not noticed as a rule much emotional display, but at times a patient will burst out crying on slight provocation and especially if there is some question under discussion to irritate or excite him.

The men are usually unduly irritable and will tell you that they find that before they can use their judgment under some simple but annoying detail, they find that they are so nervous or excitable that they act without the necessary control.

This feature of their own case often worries them as one can readily see, since it may lead to consequences at times that are to be regretted.

I do not think that it will be necessary to advise the returned soldier "To spare the

rod and spoil the child" it is more likely that he will spoil the rod.

The will power is not to a marked degree affected, as they seem willing to go ahead, and soon acquire their determination as to decide what suits them best.

In short, one may in a few lines describe the mental condition of nerve shock cases by saying that they have the increased irritability in psychical processes that go with the man, who is engaged in out door work, and not the disturbances met with in civil practice of the brain worker.

Turning now to the motor field, one may note that the tremor may reach to a very severe degree, in some cases, and extend to the legs and to the body and the head, and may pass from a fine tremor to an exceedingly coarse one.

Tics of the face are common and there may be originated a severe generalized tic of the whole musculature that throws the man about in his bed.

Motor weakness is seldom complained of, and there appear to be few cases of very marked exhaustion.

Sensation is affected mainly in two ways: namely, in connection with headache and with backache. The latter is I think the most common and has to be most carefully separated from injuries to the back, such as lumbar sacral relaxation, sacroiliac luxations, and other such processes, and also from fibrositic and arthritic changes from rheumatism and from infection.

Headache has been quite a rare sign among my cases, and usually has been associated with a true injury of the skull.

Perhaps the most interesting symptoms in the shock cases are those due to implication of the sympathetic and they are of many forms.

The most common of these are the vaso-

motor conditions, and first of all come the faint attacks which are found in the majority of cases. These occur on the least excitement, and also in many instances on exertion. They vary from slight dizziness to actual slight loss of consciousness, and must be carefully separated from the similar petit mal attacks characteristic of epilepsy. While in some soldiers only an attack in a week, may be noticed or even less, yet in others, their frequency is many times in the day. They form one of the principal objections raised to the owners returning to their work, as it leaves them fearful of going above ground level.

Other vasomotor conditions are the marked reactions to skin dermatographia, and the cold hands and feet, and also the sweating already referred to.

The heart condition is the next most important organ affected, and it is unnecessary to recall your attention to the lengthy articles written at the beginning of the war as to the question of these heart affections being due to hyperthyroidism or not. Suffice to say that one meets with rapidity of the heart's action as almost a constant symptom, and this will be found to occur in varied degree. In some men the least exertion will bring on an attack, even walking a few yards, while in others it will require some unusual exertion, or some additional excitement to produce it. The patients are extremely aware of the disturbance and speak of it as a throbbing sensation or as a great feeling of distress in their chest. At times it produces actual pain but this is not usual in my cases.

Respiratory disturbances have been quite rare since the control of gas has been more effectual, and the majority of these cases have evidently been associated with that distressing agent.

As I have already noted there appears to be a decided lack of gastrointestinal disease of nervous origin, and apart from some cases of vomiting and loss of appetite it has been really remarkable how few have complained of this class of ailment. Perhaps it is due to the avidity of the gastrointestinal specialists, having swallowed all these forms of nervous disturbance themselves.

In regard to genitourinary cases there have appeared quite a number of men with the most interesting symptoms. They complain of incontinence of urine, the sphincter control apparently being diminished, and their sense of bladder fullness being imperfect. They have frequently lost sexual power, and there is no power of erection. There is no anesthesia of the buttocks or sacral skin regions. The cases have followed shock, and in all the cases the Wassermann both of blood and spinal fluid has been negative, and the cell and albumen tests negative. The genitourinary surgeons have found no disease, and there is no doubt but that the soldiers are true shock cases, and they have not been very satisfactory as regards response to treatment.

I have referred so far to the cases of increase irritability in the nervous system, and I wish to briefly turn to the subject of disassociation.

These types are similar to those in civil practice and show most commonly these characteristics.

The memory is frequently blotted out for long periods of time, and while it may be completely lost, yet as a rule in the cases here the lacunae have been for a definite period and the men have retained the knowledge of articles, of food and so on while they have lost the recognition of their relationship to individuals, places,

occupation, time, and frequently their own identity.

This primary loss after the accident is generally associated with periodical attacks in which they lose all knowledge of their present surroundings, and wander as if in a dream. The duration of these secondary attacks may be short, or last some days, and are extremely annoying to the employer and the friends as well as to the patients themselves.

As to the simpler forms of disassociation they are fairly common, and are met with, as amblyopia and field retraction, deafness, various forms of hysterical anesthesia and many forms of motor paralysis, all of which in no way differ from the same conditions in civil life.

One condition that might fall under this heading is the development of stammering by many cases.

Under the term hyperassociation, I refer to the opposite functional conditions to those included under disassociation, namely all states in which the patient's psychical activities are focused on one idea, or in which there is a constant or frequently recurring psychomotor action, or a complaint of some parallel psychosensory disturbance.

By far the most common are the psychomotor hyperassociations, and they are among the most difficult to cure in the cases of long duration. While the tics are types of these, as distinguished from the true twitchings and jerks of simple increased irritability, yet they advance to the most extreme and complicated conditions.

One meets over and over again with functional contractions of the arms and legs, and with peculiar movements regularly performed of various parts of the body. These are all violently increased by the ac-

tion of any excitement on the individual, and may lead to a very extreme outburst of emotion and loss of psychical control.

Take a typical case. X was severely shell shocked at the battle of Loos. He was unconscious for some days and on regaining his senses, was disassociated in memory. He then noticed that his right leg, on any attempt to stand, immediately stiffened and he became generally intensely excited. After six months' treatment in special hospitals, he is better but cannot stand. One tests this case, gets him out of bed, and one sees that the whole right leg which was apparently normal in bed becomes rigid and he is forced to stand on his toes; this is a type of hyperassociated action; finally the man becomes fearfully excited lies on his bed where he is placed and becomes a pitiful spectacle, sobbing and weeping, and wholly unable to speak or answer any question, and to whom the least words of cheer are only met with fresh signs of agitation which may last for hours

From these three great functional disturbances of the nervous system namely, hyperirritability, disassociation, and hyperassociation, which as one must readily understand occur frequently in the same individual, let me discuss one final condition namely, involuntary action.

The majority of cases showing marked involuntary psychical action, that I have seen, have been old cases of dementia precox, and I will not refer to them, but wish to briefly discuss that more interesting type of involuntary action called epilepsy.

Thousands of epileptics have volunteered for the war and for so doing require a word of credit, but not the nation who has been so unfortunate as to receive their services, as they are in many cases a load on the country for the future.

In the cases that have passed under my care, I have been surprised by the number, who could be proven to have had attacks before admission to the service, and it is quite common to find that cases who had had remissions for years, have had a return under, not so much the shock of shells but from the overwork attached to the routine of their daily work before reaching France. It is undeniably the heavy work that leads to the production of epilepsy in most of these cases.

As to the acquisition of this diseased function, under the action of shell shock, I have practically no cases to offer, excluding the cases of an entirely different class, where trauma to the head has caused brain or skull injury. Naturally there are cases due to the warfare itself but they are not found in any large degree among those I have seen.

To turn now to the question of the prognosis on these functional cases, I feel that as a whole it is every good indeed, although time alone will show to what extent this recovery is complete. The sooner the case returns home I believe the better, as the long sojourning in the hospitals abroad appears to make the cases more resistant to treatment, and of late the more rapid return, has apparently given us more rapid cures and quicker return to work.

Personally I take the view that all should recover and the psychical outlook that is so given, I feel is itself beneficial to the cases. That brings in a peculiar symptom namely, if in many cases you suggest to the man that his symptoms are fast passing away, and that he is nearly well, you may be surprised to see him becoming extremely nervous, faint or dizzy, sweat, and lose complete control of himself. That type of case I have always found was much more severe

than others who did not react in that way, and required longer treatment.

I can add nothing new to the means of treatment, whether psychical, physical, baths, massage, hydrotherapy, electricity and so on but one may say that there is no rule of thumb and each case must follow the course that proves best for it on trial.

One group speaks very highly of the effect of constant baths, while another prefers the spinal douche and salt rub, a third state they are always worse after any form of treatment, and prefer quiet and short walks, and a fourth have gained more under the influence of commencing work. To many home life has been the best treatment, and the care of mother or sister all that was required, while to some, that only acted as a deterring agent to recovery, and in the company of men they knew and the health of hospital discipline, they gained more rapidly.

My advice is to watch your man and see what appears to benefit him most, and be full of encouragement and you may expect good results. I am not in touch with the results of hypnotic treatment abroad, but many of these cases have had it and are not cured, and yet that statement does not enter judgment against it as the same can be said of many other forms of treatment, while cases cured by hypnotism would not have returned home. In asking the men, they have told me that many of those they knew as treated by it had relapsed, when away from the hospital where it was given, and this means the hope that the workers in this field are following their cases up for future reports. In conclusion let me apologize for the nature of this paper. It is not the history of shell shock in the field but the tale of the returned soldier, who has passed thru many hospitals, in the

field, at the base, in England and France, has finally been sent home as unfit and uncured.

SURGERY IN FIELD HOSPITAL SERVICE.

BY

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I will first try to differentiate classification of hospitals according to the location, service rendered and later the topics of interest in the field hospital service. After the establishment of an army well entrenched your system of classification becomes of the field, base and convalescence types. Your field hospital may become a base hospital by your army moving forward or your base hospital a field hospital by retreat. The customary routine of the wounded is to be moved first to a dressing station where the wound is simply bandaged and the part rendered fit for transportation to a field hospital. This is usually three to five miles behind the line of fighting or contention. The base hospital is for the release of congestion in field hospitals and is therefore for the many wounded which arrive by so-called drives, also for operative work of less expedient nature. The convalescence hospital is usually in any part of the country easily accessible by railroad and as the name describes is for the fitting of men in the best possible manner to return to active service or fit him for some occupation whereby he may be a help to his Government.

Surgery rendered in field hospital service is the care of the wounded at its most critical time and requires the keenest judgment as to the question of operation, amputation

and drainage. It also serves to put the wounded in the best possible condition for transportation to base hospitals in the rear. Field hospitals are for the operating of cases of expediency and the ability and competency of the surgeons in charge should be of the very best. At the most it would be as wrong to evacuate a case to a base hospital or on his road thereto in an improper condition as it would be if he had no treatment whatsoever; knowing that it would be some distance and possibly several days before he reaches his destination. In war, troops come first, ammunition and supplies later and the wounded last. This is one of the unfortunate factors of modern warfare. The well equipped field hospital should be sufficiently supplied to do good surgery and to hold itself in readiness to evacuate at any time. You may have a building of considerable size which has been equipped and supplied by army and Red Cross organizations. It may have been a hotel, mansion, school or any other public institution, which by the use of book cases for supplies and the rooms for wards usually well ventilated and heated, can be made ready in a few days for the receipt of wounded men.

The patient brought to a field hospital may be seen from twenty minutes to several hours after his injury or may lie out on "No Man's Land" until night when he is removed under cover of darkness. The great impressive factor in field hospitals service is reducing of shock. A great deal of study has been given this work by Criel of Cleveland, Ohio. His experiments have had to do with the dealings of animals which have been subjected to shock and others shock plus morphia. The action of shock is carried on jointly upon these three organs—cerebellum, liver and ad-

renal. He mentions that if we take sections of these tissues and examine them, the normal distribution of chromatin is markedly diminished in the organic cells of the animal which has been subjected to injury, shock, fear, excitement, starvation or exhaustion without morphia; whereas the contrary is the same where morphia has been used. We have found the one drug, morphia in fairly large doses has markedly reduced the shock and unquestionably saved many lives. We also know the size or amount of destruction of tissue in a wound is not always the vital factor in early deaths. Many cases of wounded have died within a few hours after entrance with hardly an abrasion upon the surface worthy of mention; therefore morphia should be administered at your first dressing station or at your field hospital immediately upon entrance. You also have the cases of hemorrhages which must be treated immediately, fractures reduced and the best possible apparatus used so that the patient may be easily transported to base hospitals. For hemorrhage ligation is often instituted, infusion and transfusion have been given, but the latter is not practical in the rush and hurry of field hospital service. Other cases are simply put to bed, the established hospital routine given and the one thing which seems to be inevitable, which is infection, awaited.

The topic of infection is a great factor which confronts the surgeons in field hospital service. Antiseptics have generally failed. Some have advocated incision of the wound and a thoro opening and drainage especially when considerable dirt, clothing and debris have been carried into the wound. Very rarely is a bullet removed at this time unless easily accessible and depending a good deal upon the condition of

the patient as he may be in more or less condition of shock. Sir Almoth Wright, of London, describes the treatment of infected wounds in a very thoro manner, he believing that first thoro drainage with frequent irrigation of the wound with a hypertonic solution of a one-half per cent. sodium citrate in normal salt solution to produce a lymphlavia and also to increase the opsonic index of your patient by serum or vaccine, he claiming that the latter is not practical unless lymphlavia is active in wound. The antiseptics themselves merely have been used to keep the skin and surrounding tissue from further infecting these wounds; but it is generally understood that efforts to render a wound sterile by these agents is without avail. We therefore direct our attention to the cleaning up of the suppuration and subsequent healing of the affected part. We also have our well known Dakin's solution which seems to meet the approval of noted surgeons and is without question the best we have at our service at the present time. In simple infections the dressing should be done every two or three hours thereby keeping the bacterial content in your wound low and the irrigation in the citrate solution into the tissues which have been devitalized and of low resistance, seems to produce increased drainage and prevent the extension of the infection into other parts.

Many develop suppuration and subsequent gas gangrene may develop by the presence of the bacillus of Welch. It being recognized by rapid rise of temperature, shock, delirium, swelling and bubbles of gas escaping from the wounds. This means free incision longitudinally clear into the muscle planes, possibly as far as the bone. Some afterwards use saturated dressings with ether or peroxide as this is an anaero-

bic bacteria. Others amputate but many times your infection has gone into the planes higher up and multiple long deep incisions seem to do as well. The one word which should be law is that on the slightest escape of gas from the wound to immediately incise the limb longitudinally into all planes instituting thoro drainage and setting up Dakin's solution for irrigation every two or three hours.

Hemorrhage may become an annoying factor at this time as well as on the entrance of the patient. If a spicule of bone has entered the blood vessel and been sufficiently impacked, clot formed, it controls the same. But we may get this same plug loosened later with subsequent loss of your patient. Many times infections traveling up the blood vessel planes will erode a portion of the artery which may give way on the slightest exertion and fatal hemorrhage occur. We should ever bear in mind not to transport these cases until all possibility of infection with erosion or penetration with liquefaction of a vessel has been removed. Reduction of fractures needs no comment, but the fact that nearly all are compound and comminuted, a few words on amputation may be added. It many times taxes one to the utmost whether to amputate or not if the surrounding tissue has been destroyed, remembering also that an artery the size of the subclavian may become occluded by clot or hemorrhage into perivascular tissue, later the hemorrhage may be absorbed or drained and circulation in the limb restored. In infected cases amputation with the stump left open gives the best result making careful search to ligate arteries and we should over be in readiness to act if these arteries give way and active hemorrhage occur. Many a patient remains on the border line

for a few days and perhaps saves his leg where if he were transported to a base hospital for service to be given him he would undoubtedly need amputation upon arrival because of the poor drainage, increased infection and lack of care which cannot be given during transportation. Infection of wound about the shoulders and pelvis are of a very severe type. They run a very active course and incisions always open into dangerous areas.

The topic of removing the missile is not of the greatest importance at the field hospital. In many cases the bullet passes thru; others where the shock is severe as of the abdomen where hemorrhage is not present, it seems to do as well to leave them alone. The missile has done its work and should only be removed if easily accessible or causing pressure symptoms, bearing in mind that they can be removed later under better conditions as regard the equipment, time and the patient in base hospital. Mentally the patient in a field hospital feels a sense of uneasiness to be lying in an institution and mindful of the fact that the enemy may come upon him at any time. You do not always have the time or place for men who have simple wounds or to remove their missiles, but they can easily be transported to the rear and your time left to those who have more perplexing wounds.

Details have not been taken up at this time for it is keen judgment and action that give best results. Your decision as to whether he will stand the journey, whether all chances of complication have passed may be the fate of the man's life. You are even mindful that you must evacuate and keep your hospital in readiness for sudden onrush of wounded. The army officials wish the field hospitals clear and

open as possible at all times and you should not overburden it with moderately severe cases. The surgeon of the field hospital should put forth the very best that is in him for the wounded left in his care. His decision as to cases sent to the rear knowing the distance and time for transportation should ever make you alert to the possibilities of a return hemorrhage or increased infection. On the other hand your hospital should be ever ready for any emergency either for the receipt of many wounded or to evacuate them to a place in the rear. Your emergency judgment may decide the fate of a man's limb or even his life. The topic of base and convalescence hospitals may not differ as to some of the perplexing problems, but these could be treated better under separate cover and much can be said which be a benefit to all.

AMERICAN MEDICAL WOMEN AND THE WORLD WAR.

BY

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The role played by the woman of today in the constant fight, which medical science wages, for the relief of the human race, has been, in recent years, the subject of much discussion, some of it acrimonious, and it was my privilege, very recently, to make an intensive study of the field for medical women for *The Woman's Medical Journal*, the results of which were published by that Journal in its issue of March, 1917. In the course of that study some very interesting and striking statistics were de-

veloped which appear to me to have a very timely character, now that America is actively involved in the World War and the President is calling on all men and all women "to speak, act and serve together."

In order to obtain some relative idea of the approximate proportion of men and women in the medical profession, the names contained in the Fifth Edition of the American Medical Directory (1916) were checked over and a table made which is given below (Table I). In this the number of physicians in a given state is taken direct from the American Medical Directory and the number of women physicians is designated as "approximate," because the difficulty, in determining definitely whether a name were male or female, indicated the wisdom of erring on the side of underestimating the women, rather than the reverse; therefore such names as "Evelyn," "Marion," "Jean," and "Francis" were always counted as men, unless graduated from a distinctly woman's medical college. The difficulty can perhaps be better appreciated if I cite the fact that I found a "Melvin" and an "Addison" graduated from two women's colleges,—the "Woman's Medical College of Pennsylvania" and the "New York Medical College and Hospital for Women" respectively; whereas among my other troubles were an "Ivy" from New York University and Bellevue Medical College, and a "Beth" and two "Pearls" from Harvard Medical School,—two distinctly and persistently masculine colleges.

TABLE I.

STATE	Total Physicians (A. M. A. Figures)	Women Physicians (Approx- imately)
Alabama	2,569	12
Arizona	307	9
Arkansas	2,637	25
California	5,687	520

Colorado	1,733	111
Connecticut	1,678	63
Delaware	261	6
District of Columbia	1,482	59
Florida	1,321	33
Georgia	3,421	28
Idaho	438	11
Illinois	10,648	657
Indiana	4,872	169
Iowa	3,751	170
Kansas	2,683	114
Kentucky	3,584	70
Louisiana	2,060	23
Maine	1,205	36
Maryland	2,292	74
Massachusetts	5,869	475
Michigan	4,360	176
Minnesota	2,447	96
Mississippi	2,048	18
Missouri	6,399	158
Montana	636	22
Nebraska	1,911	98
Nevada	154	5
New Hampshire	690	35
New Jersey	3,239	152
New Mexico	430	9
New York	15,670	710
North Carolina	2,102	22
North Dakota	586	13
Ohio	8,045	301
Oklahoma	2,634	54
Oregon	1,187	86
Pennsylvania	11,502	482
Rhode Island	772	26
South Carolina	1,399	13
South Dakota	676	19
Tennessee	3,457	30
Texas	6,240	81
Utah	465	16
Vermont	668	12
Virginia	2,547	20
Washington	1,695	77
West Virginia	1,729	30
Wisconsin	2,803	79
Wyoming	251	14
Alaska	86	5
Canal Zone	97	3
Hawaii	162	2
Philippine Islands	735	17
Porto Rico	292	6
Alberta	494	5
British Columbia	537	13
Manitoba	463	3
New Brunswick	257	5
Nova Scotia	446	9
Ontario	3,032	55
Prince Edward Island	75	0
Quebec	1,859	15
Saskatchewan	489	2
Yukon	6	0
Newfoundland	95	0

Thus we see that Canada having 7,707 physicians (which are in the proportion of 0.10 per cent. to her estimated population in 1915-1916), has 107 medical women

amongst them, that is to say, 1.39 per cent. of her physicians are women. The United States, including its insular possessions and dependencies has 146,612 physicians (which are in the proportion of 0.13 per cent. to her estimated population in 1915-1916), of whom 5,551 are women, that is to say 3.78 per cent. of the physicians are women. In the Continental United States alone there are 145,240 physicians (which is in the proportion of 0.14 per cent. of her estimated population in 1915-1916) of whom 5,518 are medical women, or about 3.80 per cent. of her physicians are women. The following table shows: First the proportion of the general population, as estimated in 1915-16, which is composed of physicians; second, the percentage of medical women among the licensed physicians; third, the percentage of medical women in the State or Territorial Medical Societies membership.

TABLE II.

STATE	Percentage of Physicians to Estimated Population 1915-16	Percentage of Physicians in the State who are Women	Percentage of all Members of State Medical Society who are Women
Alabama	0.06%	0.47%	0.34%
Arizona	0.13	2.93	1.66
Arkansas	0.15	0.95	0.66
California	0.13	9.14	6.17
Colorado	0.18	6.41	1.94
Connecticut	0.14	3.75	3.02
Delaware	0.12	2.30	0.00
Dist. of Columbia..	0.41	3.99	4.63
Florida	0.15	2.50	1.15
Georgia	0.12	0.82	0.42
Idaho	0.11	2.51	1.43
Illinois	0.17	6.17	4.04
Indiana	0.17	3.47	2.40
Iowa	0.17	4.53	3.10
Kansas	0.15	4.25	2.83
Kentucky	0.15	1.95	1.40
Louisiana	0.11	1.12	1.65
Maine	0.16	2.99	2.08
Maryland	0.17	3.23	2.03
Massachusetts	0.16	8.09	4.85

Michigan	0.14	4.04	2.83
Minnesota	0.11	3.92	2.67
Mississippi	0.11	0.88	0.77
Missouri	0.19	2.47	1.38
Montana	0.14	3.46	2.39
Nebraska	0.15	5.13	3.30
Nevada	0.15	3.25	0.00
New Hampshire ...	0.16	5.07	4.29
New Jersey	0.11	4.69	4.04
New Mexico	0.11	2.09	2.37
New York	0.15	4.54	3.59
North Carolina	0.09	1.05	1.01
North Dakota	0.08	2.22	1.55
Ohio	0.16	3.74	2.48
Oklahoma	0.12	2.05	1.76
Oregon	0.15	7.24	4.25
Pennsylvania	0.14	4.19	3.43
Rhode Island	0.13	3.37	1.86
South Carolina	0.08	0.93	1.09
South Dakota	0.10	2.81	1.08
Tennessee	0.15	0.87	0.58
Texas	0.14	1.30	1.25
Utah	0.11	3.44	1.68
Vermont	0.18	1.80	1.04
Virginia	0.12	0.78	0.39
Washington	0.11	4.54	4.13
West Virginia	0.12	1.73	1.74
Wisconsin	0.11	2.82	2.25
Wyoming	0.14	5.58	1.69
Alaska	0.13	5.81	9.09
Canal Zone	0.31	3.09	2.13
Hawaii	0.08	1.23	1.15
Philippine Islands..	0.01	2.31	4.44
Porto Rico	0.02	2.05	1.89

Of the 5,518 medical women in the Continental United States 5,124, or 92.86%, are in active practice; 29, or 0.53%, are retired, having been graduated prior to 1875 and mostly in the '60's; and 365, or 6.61% are listed as "not in practice," and of these latter 55.06% are graduates of sectarian medical schools, *i. e.*, 194 homeopathic, 6 eclectic, and 1 physio-medical, whereas of those in active practice 7.36% are sectarian practitioners, *i. e.*, 287 homeopathic, 77 eclectic, and 13 physio-medical.

Of the 5,124 active medical women 1,313, or 25.62%, are specializing in one field or another, as is demonstrated by the following chart, Table III, compiled from the statistics furnished in the American Medical Directory.

TABLE III.

SPECIALTY	Practiced Exclusively by	Special Interest Expressed by	Total of Medical Women Specializing in
Gynecology	53	466	519
Obstetrics	9	134	143
Pediatrics	10	119	129
Surgery	11	63	74
Ophthalmology. Otology,			
Laryngology & Rhinology	42	29	71
Neurology	15	51	66
Psychiatry	21	36	57
Ophthalmology	24	25	49
Clinical Pathology	14	20	34
Anesthesia	6	22	28
Otology, Laryngology and			
Rhinology	8	17	25
Pathology	9	10	19
Dermatology	6	10	16
Roentgenology	5	11	16
Tuberculosis	3	13	16
Orthopedic Surgery	1	9	10
Internal Medicine	8	0	8
Laryngology & Rhinology	1	7	8
Public Health	7	1	8
Bacteriology	4	3	7
Ophthalmology & Otology	1	4	5
Proctology	0	3	3
Urology	0	2	2
Totals	258	1055	1313

From these figures it would seem that the medical women have not found that the social service and laboratory fields were the branches of medicine, which *ipso facto* are most adapted to their success. On the contrary it appears that five non-laboratory subjects: Gynecology (519), obstetrics (143), pediatrics (129), ophthalmology (which either alone or with ear, nose, or throat claims 125) and surgery (74),—claim 75.40% of the women who are specializing, and 19.32% of all the women in active practice in the country; whereas the five subjects which may be rightly said to be included in the social service and laboratory fields,—clinical pathology (34), pathology (19), roentgenology (16), public health (8), and bacteriology (7),—claim but

6.40% of the women who are specializing and 1.64% of all the women in active practice.

These figures also suggest that 74.37% of the women in active practice are interested in general medicine, since they are not listed as specializing, exclusively or in part, and that the remaining 239, or 18.20% of the specialists are interested in subjects not inclusive within strictly social service or laboratory fields. Therefore with 98.36% of the active medical women available for service outside of the laboratories the claim that I have made elsewhere¹ that in the present national crisis the medical women as a body are "probably better equipped to do practical service than any other one class of women," would appear to be justified.

In this connection, *i. e.*, active service in medical units at the front or in base hospitals (such as have been organized by the Scottish Women's Hospital Service, and are serving in Britain, France and other fields abroad), it is of interest that 34.42% of the medical women specializing, or 8.82% of the active medical women, are already well equipped by their past experience to take high rank in medical service units. That is to say that the 452 women already specializing in neurology, psychiatry, surgery, orthopedic surgery, ophthalmology, anesthesia, tuberculosis and the typically laboratory subjects, are already trained in the purely medical field required to equip them for such field service units. They have not the experience in such actual units (with a few individual exceptions), which our British sisters have today, but neither have our medical men (again with a few individual exceptions), that experience, and therefore I

¹ *Medical Record*, April 21, 1917.

claim they are as well equipped as their medical brothers.

In the *Medical Record* I have pointed out that the remaining 91.18% of the medical women can do excellent service to the country if they "take up and carry forward the civilian medical work of their respective communities, and thereby release men, perhaps better equipped than themselves, for the needs of the country's military service." In this connection it is of interest perhaps to note (Table IV) the table showing the distribution of women specializing in relation to those practicing in the United States.

TABLE IV.

STATE	Women Licensed to Practice Medicine	Medical Women Specializing
Alabama	12	1
Arizona	9	1
Arkansas	25	1
California	520	108
Colorado	111	25
Connecticut	63	12
Delaware	6	1
District of Columbia ...	59	13
Florida	33	4
Georgia	28	6
Idaho	11	2
Illinois	657	145
Indiana	169	47
Iowa	170	48
Kansas	114	29
Kentucky	70	10
Louisiana	23	9
Maine	36	8
Maryland	74	16
Massachusetts	475	114
Michigan	176	51
Minnesota	96	23
Mississippi	18	0
Missouri	158	32
Montana	22	3
Nebraska	98	22
Nevada	5	1
New Hampshire	35	7
New Jersey	152	26
New Mexico	9	4
New York	710	160
North Carolina	22	5
North Dakota	13	2
Ohio	301	66
Oklahoma	54	18
Oregon	86	20
Pennsylvania	482	153
Rhode Island	26	9
South Carolina	13	1

South Dakota	19	1
Tennessee	30	4
Texas	81	24
Utah	16	3
Vermont	12	2
Virginia	20	4
Washington	77	24
West Virginia	30	9
Wisconsin	79	25
Wyoming	14	3
Totals	5,518	1,313

Also it interested me to notice the order of precedence amongst the various States of the Union. For example, the fifteen States having the largest numbers of physicians are in order from highest downward as follows: New York, Pennsylvania, Illinois, Ohio, Missouri, Texas, Massachusetts, California, Indiana, Michigan, Iowa, Kentucky, Tennessee, Georgia and New Jersey.

Of these only New Jersey, Georgia and California have a proportion of physicians to population below that of the Continental United States, and in all three this proportion is higher than that for Canada in normal times. Therefore it is fair to conclude that all fifteen of these States could afford to spare a reasonable proportion of their physicians for service in the army or navy.

The following table (Table V) gives in order of precedence from highest downward, the 19 units of the United States exclusive of District of Columbia and dependencies, which have the largest numbers; First of physicians in proportion to estimated population, this being higher than the average for the Continental United States, (0.14%)¹; second of physicians actually licensed in the State; third of medical women resident in the State, and fourth of medical women specializing in their practice in the State.¹

¹ States bracketed together have the same figures.

TABLE V.

Physicians in Proportion to the Estimated Population		Largest Number of Physicians Actual- ly Licensed	Largest Number of Women Physicians Actually Licensed	Largest Number of Medical Women Specializing
1. Missouri	0.19%	New York	New York	New York
2. Colorado	0.18%	Pennsylvania	Illinois	Pennsylvania
3. Vermont		Illinois	California	Illinois
4. Illinois	0.17%	Ohio	Pennsylvania	Massachusetts
5. Indiana		Missouri	Massachusetts	California
6. Iowa		Texas	Ohio	Ohio
7. Maryland	0.16%	Massachusetts	Michigan	Michigan
8. Maine		California	Iowa	Iowa
9. Massachusetts		Indiana	Indiana	Indiana
10. New Hampshire		Michigan	Missouri	Missouri
11. Ohio	0.15%	Iowa	New Jersey	Kansas
12. Arkansas		Kentucky	Kansas	New Jersey
13. Florida		Tennessee	Colorado	Colorado
14. Kansas		Georgia	Nebraska	Wisconsin
15. Nebraska		New Jersey	Minnesota	Texas
16. Nevada		Wisconsin	Oregon	Washington
17. New York		Kansas	Texas	Minnesota
18. Oregon		Arkansas	Wisconsin	Nebraska
19. Tennessee		Oklahoma	Washington	Oregon

From the table it would seem apparent that in order Illinois, Ohio, Massachusetts, Missouri, Indiana, Iowa, New York and Kansas can best afford to spare some medical men for the front and provide medical women to substitute for them in civilian practice.

Next in order would apparently come Colorado, which (tho she has not achieved a place in the column showing 19 largest number of physicians actually licensed), stands second in the proportion of her physicians to population and apparently has a reasonable number of available medical women, both as specialists and as general practitioners, to call on. Vermont, which, according to population appears to have an equal proportion of physicians to Colorado, and *a greater proportion than any other State except Missouri*, would apparently need to draw on the women of some neighboring State to maintain her average efficiency for civilian work if she sent many medical men to the front. I specify "average efficiency" because the depletion of the general male population of any State by the military service of her

men (whether on a volunteer system, or, as seems to me at present preferable, a combination volunteer and compulsory service system, such as Mr. Roosevelt appears to advocate) will, of course, alter materially the proportion in numbers of physicians to population necessary for the maintenance of the health of the community.

Next, as having an available supply of medical women, who could assume the work for the medical men while in service, come apparently in order Pennsylvania, California, Michigan, New Jersey, Texas, Nebraska, Oregon and Wisconsin. But Oklahoma, Tennessee, Florida, Georgia and Arkansas can, like Vermont, apparently spare some medical men but would need to draw on some other States for medical women substitutes. Minnesota and Washington on the other hand could apparently better spare medical women, than medical men, whereas Maine, Maryland and New Hampshire appear to be in the class with a large proportional medical population without definite preference as to supplying men or women.

Some mention should be made of the

District of Columbia and the Canal Zone, which, in the percental table, show such large proportions of medical population. It is permissible to assume that a relatively large number of the physicians in these two localities already belong to the military and naval services of the country but, in the case of the District especially, this assumption will not account for the relatively large number of medical women. For instance there are only 4 less medical women in the District of Columbia than in the State of Connecticut, and the medical women are 5 more in the District than in the State of Oklahoma. In these circumstances,—unless its health conditions are inexcusably bad,—it would seem that the District could, in the National Crisis, afford to spare a few of its medical women to less fortunate (?) communities.

In the circumstances, therefore, that the President has called on the men and women to "act and serve together" it appears to me that the duty of the men and women in the medical profession is clear. To such, as are physically qualified and professionally equipped to serve the country best in the active field of medical service units at the front, or in the base hospitals, the call is definite for such service, be the individual man or woman; to the rest the call is equally definite, to take up the larger duties, the increased responsibility and wider service in civilian work, with due appreciation of the cooperative and substitutive nature of such service; and upon this remnant (which probably will be more predominately female than male in proportion to relative numbers normally in the profession) will fall also the duty of adjusting supply to demand, by a possible permanent redistribution of personnel or temporary change of residence. To this end I have

endeavored to indicate, by the statistics at my disposal, the possible or probable localities in which such redistribution may be necessary. My forecast may, of course, be incorrect owing to various unforeseeable contingencies, but it should at least be suggestive and, I hope, helpful.

101 West 80th Street.

THE SOLDIER'S FOOT.

BY

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In order to produce an effective army, certain things are essential; a country must have physically fit men, munitions, subsistence and equipment; and all of these must be developed and maintained at their maximum. These requisites, except the man power, are capable of being produced by human skill and energy, but it requires more than skill and energy to fill the ranks of an army with men who can withstand the physical strain demanded of a soldier. We all know that many physical defects, such as heart, lung and kidney lesions are not preventable but may develop during the ordinary course of life, but there are certain disabilities which, though not usually considered preventable, should be classed as such. One of the most pronounced of these is *foot weakness*. This is responsible for the rejection from service of many men who are otherwise in perfect physical condition. I have seen proof of this fact many times recently, when candidates for military service, who were apparently excellent physical specimens, had to be refused on account of this one defect.

The *sine qua non* of the individual for military service is physical fitness. His ammunition, equipment and subsistence can be purchased, but money will not produce a normal heart, a perfect digestive apparatus or good feet. Treatment may improve abnormal conditions but the most desirable thing is prevention. Defects of the vital organs are not always preventable, but unserviceable feet are usually the result of conditions which might have been prevented.

One of the most important attributes of well trained soldiery is *marching efficiency*. No army ever hobbled to victory, but foot endurance has often turned the tide of battle. These facts have been recognized for centuries by the most noted commanders of history. Napoleon is reported to have said that the man who produced a proper foot gear for soldiers would do more than anyone else toward bringing about an efficient army. Marshal Saxe is credited with the remark that "the secret of war lies in the limbs of the soldier," and Wellington said, "a soldier is as good as his feet." Evidently foot troubles are not a new problem, altho modern conditions of civilian life are undoubtedly responsible for the increase of such troubles. The present day army is composed of picked men, whereas formerly the physical examination of recruits was unheard of, so the weak foot was not discovered until men were put to the strain of marching. Ever since civilization introduced shoes, the armies of the world have been hampered by tired and "foot sore" soldiers.

The life led by most civilians does not demand maximum foot efficiency, owing to the fact that there are so many modes of transportation, and the leg and foot muscles

are not given sufficient opportunity to develop. A man can not live many years with a heart, lung or kidney lesion without some manifestation of these conditions; however, one may pass a good many years of his life with feet which are considerably below normal without encountering any particular difficulty because his feet have been able to perform the duty required by an inactive body. Even the man who is "on his feet all day" has not put his legs and pedal extremities to the severest test; that is, to such strain as is demanded by military service. We are, therefore, not always able to judge after the usual tests whether or not a man is really fit for field service. The supreme test arrives when the civilian has entered military service and is compelled to march at a fixed rate, in company with others, carrying a pack, and not being able to pick his way. Many men whose ability to march is questioned, assert that they have tramped thru forests and mountains, carrying a pack and have been able to reach their destinations without much difficulty. Tramping by one's self, or in company with a few other sympathetic individuals, is quite possible for the man with only a partially efficient foot, because he can rest at any time and usually is able to select his footing; moreover, his rate of march is modified to suit his convenience and that of his just-a-little-tired feet.

In classifying the feet of prospective recruits from the standpoint of the examiner, we might place them in three classes: First, the acceptable; second, the doubtful; third, the disqualifying.

The Acceptable Foot: If the applicant for enlistment is put thru foot and leg tests without eliciting pain he can be passed by the examiner. Of course these

tests must be severe and should consist in, hopping as high as possible, backward and forward, on one foot at a time, landing on the toes; raising the body on the toes of one foot at a time; jumping from a chair, landing on the toes, each foot separately; walking on the heels; raising the body from a squatting position. A good many men who have some obliteration of the long arch of the foot and are said to be "flat footed" can pass these tests. These cases should be classed as acceptable if they also have

may be more serious than a moderately obliterated arch, and are a potential source of trouble later. But, altho these cases can not be accepted on first presenting themselves, it is important that we should not lose track of them, for the country should not be deprived of their services, unless they are proved incurable. A moderately weak foot may be cured to such an extent that the possessor would ultimately be able to pass the required physical tests and be placed in the acceptable class. In fact,



FIG. 1. Everted painful foot—obliterated arches. See imprint Fig. 8-b.

well developed muscles, freedom from deformities and free action of all joints.

The Doubtful Foot: This class should not be accepted for enlistment, altho they are frequently able to pass the examiner. In other words, a certain amount of foot weakness might be able to pass the required examination, if it were not given with care, simply because the examiner, looking particularly for "fallen arches," may pass over other less evident pathological conditions. Some of these other conditions, however,



FIG. 1-a. Posterior view of everted foot.

I think that applicants who are in every other way desirable should be put on probation and placed under treatment in a "training squad" where they should be given selected gymnastics and other necessary treatment.

The Disqualifying Foot: This may be a misnomer in one respect because we can never be sure that after certain operative procedures the foot can not be made useful. However, what may be a useful foot for a civilian may be absolutely impossible as far

as military service is concerned; this is a question of degree and each case should be considered separately. Included in this disqualifying class are the greatly everted feet with prominent scaphoids and obliterated long arches, the "monkey foot" (Figs. 1 and 1-a); the "claw toed" foot, with contracted tendons and phalanges articulating on the dorsal surface of the metatarsals (Fig. 2), such cases usually having obliterated an-

terior arches and callosities under the distal ends of the metatarsals; the flaccid foot, with lax ligaments permitting the flattening and spreading of the bones; excessive hallux valgus (Fig. 3) often accompanied by obliteration of the long arch; excessively "high arches" (Fig. 4) and results of talipes; painful "spurs" and other exostoses; excessively ingrown nails and lapping toes; large and painful callosities and numerous corns (Fig. 5); sweating and odoriferous feet. Altho these are disquali-

fying defects, many of them are curable and such candidates should be placed on the probation list and after treatment admitted to the "training squad" for instruction and final observation. It may seem to some that this procedure is rather unnecessary, but I have been thoroly impressed of late with cases of splendid specimens of manhood who have had the sole disqualifying defect in poor feet. Often this sort of man would



FIG. 2. Claw toes; full weight of body fails to bring them to the floor.

terior arches and callosities under the distal ends of the metatarsals; the flaccid foot, with lax ligaments permitting the flattening and spreading of the bones; excessive hallux valgus (Fig. 3) often accompanied by obliteration of the long arch; excessively "high arches" (Fig. 4) and results of talipes; painful "spurs" and other exostoses; excessively ingrown nails and lapping toes; large and painful callosities and numerous corns (Fig. 5); sweating and odoriferous feet. Altho these are disquali-

make an excellent officer and such material is far too scarce.

I wish now to consider the means by which a great number of these cases can be made available for military service. The most difficult deformities to deal with are the "monkey foot," the flaccid foot, and depressed anterior arches. I think the best operation for the cure of the *everted foot* with marked displacement of the scaphoid, is one which was first brought to my attention by Dr. Robert E. Soule. This opera-



FIG. 3. Hallux valgus and bunion; note deviation from normal of first metatarsal and phalanges of great toe; also exostoses (e) on other bones; also prominent, dislocated scaphoid.



FIG. 4. "High arch"—full weight on feet; painful after marching.

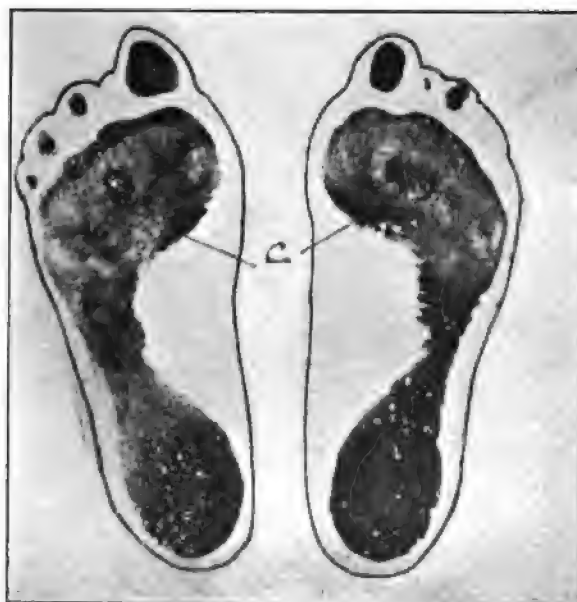


FIG. 5. Painful callosities of anterior arch (c).



FIG. 6. Pinning operation for everted foot with displaced scaphoid. Actual length of pin $2\frac{1}{4}$ inches.



FIG. 7. Aluminum molded splint for holding down "claw toes."

tion consists of making an ankylosis between the scaphoid and the astragalus with the extra support of a bone pin penetrating both bones at an angle of about 45 degrees, the foot then being inverted and placed in plaster of Paris, or an aluminum splint, shaped for the purpose. This operation usually produces a serviceable foot for the civilian and I am inclined to believe that in most cases, it would withstand the strain of military service (Fig. 6). So far as I know there is no method which could be used to make the flaccid foot serviceable for military purposes, and therefore, such feet for the present must be definitely refused.

The extreme *depression* of the *anterior arch*, with the usual "claw toes," is a difficult problem and the operations so far devised to remedy this deformity, such as resection of the distal ends of the metatarsals, are of doubtful value, from a military standpoint.

Hallux valgus should be treated radically by the resection of the distal end of the first metatarsal or by the removal of a V-shaped wedge just posterior to the articular surface. In these cases the extensor tendon should be replaced with care in order that the pull can be in the original direction; that is, the tendon must be parallel with the replaced great toe.

Simple *clawed toes* can be made serviceable by a lengthening of the extensor tendons and placing the toes in a flexed position held by properly shaped aluminum splints (Fig. 7). By the use of such splints a good many deformed toes can be returned to normal without operation. *Hammer toes* can be corrected by operation, but if there is a great deal of bony deformity the toe should be amputated. "*Spurs*" and other

exostoses and *ingrowing nails* can usually be cured by the customary operations.

There are a few points in *methods* of *examination* and *recording* to which I would like to call attention. In addition to the usual gymnastic examination of the candidate for enlistment, we are often called upon to examine the feet of the active soldier,



FIG. 8. Imprint of normal foot.

who has undergone some accident or excessive strain affecting his marching ability. These should be studied with care and given at least as much thought as a cavalry man gives to the feet of his horse. We have experts to work on the horse's hoofs but seldom do we hear of an expert on human feet being assigned to duty with active



FIG. 8-a. Method of recording abnormalities; note hammer toes (h).



FIG. 8-b. Method of recording abnormalities; note depressed long arch, and prominent scaphoid (s).



FIG. 9. Depressed long arches, excessive.



FIG. 9-a. Depressed long arches, moderate.

troops, or even those undergoing training for active service. In garrison, or permanent camps, a record should be made of each "foot case" by taking an imprint of both feet, with full weight of the body upon them; before the feet are removed from the paper the contour should be drawn by holding a pencil vertically and following the curves of the foot. It can be seen in Figs. 8, 8-a and 8-b, that certain abnormalities are easily recorded by this method and even if the record be taken by some one other than the surgeon, the latter can diagnose the case, in most instances. In addition to the foot prints and contours, certain other information should be recorded, such as age, weight, posture, contour of legs, pain, rigidity or laxity of muscles; location and extent of callosities; size and width of shoe worn. This method, with some elaboration, has proven of value in private practice as well as in military work.

Even the soldier of considerable experience is liable to certain foot troubles during campaign and to suffer more or less until he has become accustomed to the new conditions and gotten his "marching legs." I will describe some of the most common marching ailments and recommend methods for alleviating them.

A "*weak foot*" will frequently develop in the early days of strenuous field training and often results in pain and depression of the long arch (Figs. 9 and 9-a). This condition might be the result of an accident or of excessive strain. I wish to lay stress upon the fact that we frequently find depression of the long arch of the foot after a severe sprain or fracture of the ankle. Patients who develop "painful arches" and similar conditions on the march should be rested immediately, or at least relieved of arms

and pack. Often a very severe pain in the arch can be relieved by proper strapping and bandaging, making it possible for the soldier to march many more miles. I have experimented with cases in which there existed a marked degree of obliteration of the long arch, with eversion of the foot. Supporting the feet of such patients has made it possible for them to carry their arms and pack thru a march of twelve to fifteen miles. They have also retained their position in column and taken part in the maneuvers of



FIG. 10. Flat, painful foot—method of supporting arch with felt pad, adhesive straps and bandages; note position of strap (colored black) at heel, holding up anterior end of os calcis.

the day. These men, who were intelligent and much interested in the experiment, were certain that they could not have finished the march without the support. An example of one of these cases is shown in (Fig. 10). The supports were reapplied each day. A ready means of support for a foot which becomes painful on the march is the French marching strap, which is placed under the shank of the shoe, crossed over the instep and then around the ankle and fastened. Often this weakness of the long arch of the foot is aggravated by a

faulty construction of the shoe in which the shank is thinner than the sole and the upper sags because of not being fitted well into the arch of the foot. Figs. 11 and 11-a show a shoe constructed on the proper principle; that is, the shank is sufficiently thick and the upper is fitted well under the long arch.

Another, and perhaps the commonest, disability occurring on the march, especially

trude. Overlapping toes are invariably prone to blisters. The best treatment for blisters is to paint them with tincture of iodine 3½%, open with a needle, which has been sterilized in a match flame, then apply a small dressing of cotton or gauze held in place with adhesive plaster. If the plaster is applied directly on the blister, without cotton or gauze, the healing is retarded, as



FIG. 11. Proper type of marching shoe, note thickness of shank, shaped instep, high upper.

in new commands, is *blistering of the feet*. Unless a shoe is manufactured with great care, irregularities are apt to occur along the edge of the insole. Also the lining of a shoe may shrink and fold. These two defects have been responsible for many blisters (Fig. 12). Another cause of blisters is often found in the heel where nails pro-

adhesive plaster, by its heating effect, is liable to macerate the epidermis; also it may be pulled off too soon, taking the blister with it. Any oily or greasy substance which is non-irritating is a good preventive of blisters. Foot powders containing talc are not nearly as effective as those composed of stearate of magnesia or zinc. The fact that

it does not cake and that it is greasy, makes a stearate far superior to the ordinary talcum powders, usually recommended. In an emergency, soap can be used to reduce friction but the strong laundry soaps may pro-

rubbed together and sunned frequently.

Callosities and corns: These should be removed by excavation rather than by paring. The latter method simply removes the excess of hardened tissue but does not eradicate the trouble. By keeping adhesive plaster over a callous for several days at a time, the tissue is softened and can then be excavated entirely. The process may have to be repeated several times before a complete cure is produced. Soft corns should be touched with tincture of iodine and protected with a pad of gauze or felt.

Bunions: These are often a cause of poor marching (Fig. 3). They should be operated upon, if possible, as mentioned in a former paragraph; otherwise protected with felt, held in place with adhesive plaster. The accompanying hallux valgus should be corrected by holding the great toe in the normal position with adhesive or a molded aluminum splint (Fig. 13).

Tenosynovitis: This should be treated by rest and support with adhesive straps and bandages. Often this condition of the tendon achilles is caused by rubbing of the shoe top or lower end of the legging. A shoe with a high, soft upper would prevent most of the irritation usually encountered on this tendon.

Strained and tired muscles: The most effective treatment is by heat and massage and moderate exercise. A certain amount of action in muscles which have not been severely injured is necessary in order to prevent stiffening. If on the march, adhesive strapping or bandaging will generally support a strained muscle sufficiently.

Ingrowing toe nails: These should be operated upon at the earliest opportunity as they are apt to be the source of much annoyance if not treated radically. Small



FIG. 11-a. Another view of best type of marching shoe.

duce irritation and be worse than nothing. Soiled socks are responsible for many blisters; therefore, they should be washed or

pieces of felt packed under the edges of the nail produce better results than cotton or gauze used in the same manner. The padding should be held in place with adhesive plaster passed well under the edge of the nail.

The soldier can not be too strongly impressed with the idea of the care of his feet; as good care will prevent many of the troubles just described. The feet should be washed at the end of every march, but if this be impossible a good plan is to give them a "dry wash" with some form of grease or oil. Bacon fat can usually be procured; this is rubbed over the feet, particular attention being given to the toes. The grease is then rubbed off with a cloth, or the leg part of the sock. This treatment is cleansing and leaves the skin feeling soft. Clean socks should be put on or if these are unobtainable, the soiled ones should be rubbed together, beaten and put back inside out.

The recruit is apt to place the blame for his foot troubles upon military training but the majority of ailments to which marching feet are subject are the result of abuse of the foot in civilian life. The country is now suffering from the effects of "good-looking" shoes, and the fact that we are daily refusing the services of men who have been crippled by fashionable footgear proves how important it is to begin a campaign for the education of the public at large, with the idea of arousing sufficient interest and cooperation to make it the "proper thing" to wear footgear which has at least an atom of common sense incorporated in its design. The mothers of the nation should be mobilized as instructors for the grand army of youths, who are now making themselves unfit for military service by wearing ill-shaped footgear. Thousands of women are now

clamoring to be allowed to perform some service which would be of benefit to the government. I would like to point out to them the opportunity to enter service at the front, immediately, by refusing to wear shoes that cripple, thus setting an example to our future soldiers. Let them follow the lead of the Chinese women who discontinued the custom of binding their feet, a number of years ago. Military training in the public schools would be of great value in impressing upon youths the importance of adhering



FIG. 12. Frequent location of blisters from poor fitting insoles; blisters colored with tr. iodine.

to sane footgear. Educational institutions should require all students, both boys and girls, to wear a sensible shoe, and proper training of the foot should be included in all school gymnastics. I do not mean that shoe "freaks" should be insisted upon as these are usually the production of some one whose knowledge of the foot and its requirements is very limited. A proper shoe can only be developed by combining knowledge of the foot with understanding of the methods of manufacture. It is hoped that military life will create a greater interest in sensible

foot wear and impress the civilian that he must prepare his feet for service by discarding the type of shoe which is at present fashionable.

Shoes: In attempting to solve some of the difficulties experienced by soldiers and those contemplating military training, I have been experimenting for a number of years with shoe construction. The shoe shown in Figs. 11 and 11-a, was devised after trying

similar to others but certain measurements were worked out which make the last different from any other used. A shoe devised for hard service, both in the field and in the trenches, must primarily give protection and comfort and should be made of tough leather which should be neither too dry nor too oily, but soft and pliable. The best workmanship must be employed, as skill in manufacture is of great importance.



FIG. 13. Aluminum molded splint for great toe.

many modifications in the last and after having shoes made over each last when changed. The specifications were altered upon discovering mistakes. Each part of the shoe was made, and tested for certain qualities, separately. This was only done by spending a great many hours in the factory and following each step in construction with an expert shoe manufacturer. Upon glancing at the cut it may seem that this shoe is quite

What is known as the Goodyear welt process should be used; this is the most modern mode of manufacture in which no pegs or screws are used, as in some of the cheaper processes. There should be *no lining* in a military shoe as this is responsible for a great many blisters and abrasions. The leather should be turned with the hair side out. I know that many favor placing the flesh side out, as I did originally, but

after further experiments and obtaining the opinion of others who have had experience, I concluded that with the hair side out we obtain better waterproof qualities. The toe should not have more than one inch "spring," as too much tilting upward is conducive to the formation of "claw-toes" and troubles in the anterior arch. The *sole* should be heavy but flexible. These are important points, but are entirely disregarded in the making of most shoes. The combination of *thickness* and *flexibility* is difficult to obtain, but is possible. The *shank* should be neither extremely flexible nor entirely rigid, but should be sufficiently yielding to permit freedom of action of the small bones of the foot. Entirely opposite ideas are being advanced concerning the flexibility of the shank of a shoe; some would have it so flexible that it can be doubled back with ease, as it is claimed that this freedom is necessary; others would make the shank as rigid as a board. I can not see any scientific reason for either of these, but do favor as much flexibility as possible at the "ball" of the foot, the only part that really bends in walking. It is only necessary to wear a pair of shoes made on this principle to convince one's self that the idea is the correct one. The *toe* of such a shoe should not be soft, neither should it have the ordinary "box." In fact, the box of all shoes is responsible for many foot troubles and should be done away with. Some protection to the toes, however, should be provided in a military shoe, as otherwise they are exposed to injury from stones and stubble. The best form of protection can be given by a narrow *protector* of stiff material placed at the extreme tip of the shoe. The *upper* of the shoe should be at least six inches high, thus giving much more com-

fort than the ordinary civilian shoe top, which reaches just above the ankle joint. There should be no "back-stay" or loop for pulling on the shoe, these are unnecessary and often cause trouble by friction. The *tongue* should be soft and "full bellows." The heel should be no more than one inch in height. *Hob nails* are essential for a real marching shoe, but they must be placed so as not to interfere with the flexibility of the sole. A shoe which requires much "breaking in," or soaking in water, to make it conform to the foot, is not fit for military use. The *repair* of *military shoes* should be performed by a first class workman. Every company of infantry should have an official shoe repairer whose tools and leather ought to be supplied by the government. The leather for repair of soldiers' shoes should be carefully selected as the quality of that used by the ordinary shoemaker is not good.

Socks: It is not usually supposed that socks have much to do with foot deformities, but it is true that the ordinary civilian sock exerts sufficient pressure upon the toes to cause them to overlap. It is quite evident that if the toes are constricted by socks they do not have the necessary freedom of motion and the good effects of a broad toe shoe are counteracted. Socks should be either rights and lefts or so woven that there is ample fulness at the toes. A military sock should be made of wool, or part wool, of sufficient thickness to protect the foot.

In conclusion I wish to urge upon all physicians the necessity for greater interest in this important problem and in creating a demand for sensible foot wear. I find that it is the usual thing for general practitioners to advise patients suffering with painful or abnormal feet to purchase some much

advertised shoe, without any definite idea whether or not it is applicable to the case; this is at least risky therapeutics. Weak foot and its accompanying evils are conditions which should not be dismissed by recommending them to the tender mercies of a shoe salesman. It is of the utmost importance that a proper diagnosis be arrived at and that these cases be treated scientifically.

40 East 41st Street.

OBSERVATIONS ON TREATMENT OF TETANUS.

BY

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In considering the treatment of tetanus it should be remembered that in its acute form it has a ninety per cent. mortality from a toxine four hundred times more poisonous than sulphate of strychnia. When the medical mind comprehends the gravity of this statement we will more fully appreciate the seriousness of the disease, and the necessity for its prevention, or prophylaxis, rather than waiting to try to cure this most serious of all diseases by the application of therapeutic remedies; antitoxines and the like, which have so far been unable to make any noticeable reduction in its mortality tables. It is true that in the United States where an educational propaganda has been most widely and judiciously circulated, thru our medical journals and lay press, that the number of cases of tetanus have been greatly reduced by first aid application and local prophylaxis, but at the same time, it must be admitted that we have made very little progress in curing cases of acute tetanus. In Bavaria and many sections of the bellig-

erent nations of Europe, nearly half the death rate of the wounded has been from tetanus, despite the first aid applications and antitetanic injections and other prophylactic measures used.

As a matter of course when so great a number are wounded, when doctors and nurses are so overworked, it is but natural to conclude that the prophylaxis which we are accustomed to using in civil life can hardly be expected in these war torn battle fields. The mortality in many cases being ninety per cent. on account of the absence of isolation, dark rooms, protection from cold and draughts which is impossible of accomplishment on tented fields in rigid winter climates. Before speaking specifically of the application of drugs or antitoxine to the cure of tetanus, it is necessary that we make a short study of the germ enemy and toxalbumins, we are trying to combat. The tetanus bacilli is an anaerobic, facultate saprophitic organism, capable of existence outside of the human body; it is to be found in rich garden soil, the manure of stables and in the alimentary canals of warm blooded animals. We learn from these facts why tetanus has been so prevalent in the present war on the continent, whose battles have been fought in dirt trenches, in many of the rich garden districts of that unfortunate country. It is the writer's opinion that all tetanus bacilli are not of the same virulence, in fact, this is apparently true of many other germ producing diseases. We remember many cases of syphilis, tuberculosis, diphtheria and other diseases that run a very mild course tending to recovery regardless of any treatment or in fact with no treatment at all in contradistinction to many other cases suffering from the same disease, who succumbed after a very rapid course

of most virulent pathological action. In tetanus we have two distinct clinical types; tetany with its long period of incubation, with its mild symptoms and recovery in a large per cent. of cases, that are rationally treated. In acute cases with the more virulent germs, we have a very much shorter period of incubation with a much more rapid course with a usual fatal termination. We do not think that these variations in type are altogether dependent upon the resisting powers of the patient, but on account of the great virulence of the infection. In civil surgery tetanus is very rare except among railroad laborers, stable and dairy-men who get punctured, lacerated or contused wound, into which dirt or filth has been ground. Prognosis depends upon the virulence of the infecting organism, range of temperature and period of incubation. Only ten per cent. recover if incubation is short or under ten days, where as if incubation is from fifteen to thirty days fifty to eighty per cent. may live, if properly treated under the best environments. The usual incubation of tetanus is from three days to four weeks. Those cases with long incubation may run a clinical course devoid of fever with the mild spasms confined to the wounded extremities only. The convulsions of the muscles and short incubation cases are both tonic and clonic in all parts of the body, beginning first in the muscles of mastication and deglutition and gradually involving the others. The muscles have contracted so violently in some cases as to rupture themselves, paralyze the heart and respiration, break the teeth and mangle the tongue. Irritation of the motor nerve tracts causes the tonic convulsions to begin; muscle cramps and girdle pains depend on the irritation of the sensory nerves. Clonic

spasms in severe cases are continuous except when relaxed by heroic doses of sedative drugs. Other prominent symptoms of tetanus are retension of urine, rigid abdominal muscles with no sleep or rest except from heavy drugging. When the face muscles are involved a sardonic smile is produced that is peculiar to the disease. Diaphragmatic spasms cause the girdle pain common to this disease. It is these repeated convulsions that produce the exhaustion, paralysis and high temperature that cause the fatal termination in tetanus. Temperature may range as high as one hundred and seven running up to one hundred and eight in some cases after death. Albuminuria attends this hyperpyrexia. The mind usually remains clear to the end, thus deceiving many younger surgeons about the gravity of the case on account of the clear mental condition. In the more chronic cases, the spasms are much less virulent and frequent but may last in a mild case for a month or more. The extensor muscles usually overcome the flexors in the actions of these convulsions. In the treatment of tetanus, we have to combat the high fever, muscular spasms, toxalbumin, absorbed from the germs in the wound and carried thru the nerve sheaths to the brain and spinal cord, causing the nerve explosion, which produces the spasms. We have also to combat the diseases, tendency towards exhaustion and starvation, but above all and before all we have to combat the tetanus bacilli, which remain in and about the entrance wound. We have said nothing about excluding visitors, relatives and friends tho each visit or disturbance is the occasion for another convulsion; so in the treatment of this disease, above all others the patient should be left alone with the nurse in a darkened, well

ventilated room, freed and removed from all extraneous noises and draughts if possible. Elimination and nerve sedatives are the two main points to be kept in mind in the treatment of this formidable disease. There is a great tendency to constipation in tetanus, which must be overcome by some mild purgative if it can be swallowed, or by high enemas and suppositories after deglutition has become impossible. Two daily movements of the bowels should be obtained by some measure or medicine; when not contraindicated, we have found, two and one-half to five grains each of calomel and soda most thorough in bowel evacuation when followed by large high enemas. Other cathartics may be preferred by some but the question of keeping the bowels open is imperative. In all high temperatures the urinary secretion is suppressed and often the urine albuminous. If it is possible to drink large drafts of carbonated or soda water that would be the most natural way of increasing urinary efficiency and alkalinity, but as this is impossible in most cases, we have to substitute a constant drip of sterile warm water or milk into the rectum. The feeding of the patient being so difficult, predigested nutrient enemas have to take the place of regular feeding in many cases; others are required to be fed by stomach tube or catheter directed into the esophagus. A judicious nurse can get in some nourishing fluids when the patient is under the influence of some sedatives. Agreeable liquid nourishment should be substituted for water, as it answers the double purpose of relieving the thirst and nourishing at one and the same time.

There is no doubt about the fact that prevention of tetanus by proper disinfection of all wounds and immunizing doses of serum are far better and safer than the treatment

of the disease after it has once developed. Tetanus cases have been reduced by seventy-five per cent. in the United States since the doctors and the public have been educated to a saner Fourth of July and Christmas, and the necessity for proper disinfecting and sterilizing of all wounds as soon as received. Lacerated and punctured wounds should be enlarged and all foreign bodies removed by instruments or by pouring into them a fifty per cent. solution of peroxide of hydrogen in order to remove the deeper and smaller particles driven into the tissue. Equal parts of tincture of iodine and alcohol are more suitable to these wounds than are antiseptic dusting powders, which do not so thoroughly penetrate the wounds. The application of a twenty per cent. phenol solution followed immediately by alcohol to neutralize it is an almost sure way of do not so thoroughly penetrate the wounds should be thoroughly cleansed, drained and allowed to heal by granulation. Out of sixty thousand wounded during the present war in Bavaria, four-tenths per cent. died of tetanus. Even though they had the prophylactic injection of serum in most cases; hence the necessity of using all other legitimate preventive measures including Bier's hyperemia or the actually cutting out of the wounded tissue. The mistake in prevention is giving just one dose of anti-tetanic serum when it should be repeated within from seven to ten days in order to thoroughly protect the patient. Following out the above suggestion in our clinic during the past ten years, has resulted in fewer cases of tetanus in the great Charity Hospital of New Orleans coming thru the clinic, though many more wounds have been treated during that decade than in previous years. Gunshot wounds, compound fracture and the puerperal state as well as the umbilical

cord are favorable to the development of tetanus. Contaminated dressings and instruments and hospital wards seem to spread the contagion. All infected wounds should be dressed twice daily or an alkaline drip continuously applied, for it must be remembered that the germs remain in and about the wound where it was first received, and that there are no symptoms of tetanus manifested until the toxalbumins have reached the spinal cord. The irritability of the spinal cord should be controlled by large alternating doses of sedative medicines including chloroform and ether to control the spasms. Two thousand units of antitetanic serum should be injected between the initial wound and the spinal cord; if the wound is upon the hand, the serum should be injected in the arm or near the brachial plexus; if in the foot, should be injected near the sciatic nerve. Ashhurst and Johns used chloroform in preference to ether as it is more easily administered but remember it is five times more lethal in its effect. Meltzer of New York originated the treatment of injecting twenty minims of a twenty per cent. solution of sulphate of magnesia into the spinal cord. Eighteen cases so treated resulted in a death rate of seventy per cent., which is about the same mortality as under treatment by other methods. Irons used five thousand units of antitetanic serum intraspinaly, and ten to twenty thousand units intravenously as soon as the disease is recognized. After these heroic doses, on the fourth day he again used ten thousand units subcutaneously. Our cases that have recovered have done so by the alternate uses of syrup of chloral, bromide of potassium, morphine and atropine. Daumsler of the French army recommends as much as six grams of chloral every six

hours until the spasms have relaxed. Wintraud contends that little can be expected from serum treatment, that its use is entirely preventive and not curative. Sainton cured six patients out of twenty-two by injecting forty C.C. of a two per cent. phenol solution subcutaneously twice daily. Johns and Ashhurst depressed the function of the final cord by giving from thirty to sixty grains of chloretone in either oil or whiskey. Intraspinal injection of fifteen hundred units of antitetanic serum is the quickest way to apply the remedy to the over excited spinal cord. The same amount of spinal fluid should be allowed to escape before the serum is injected. The treatment and management of tetanus cases offers a fertile field for the investigation and application of practical remedies. For after all has been said the success in treating acute cases with any present known remedy is hardly satisfactory in view of its ninety per cent. mortality. Doubtless future investigators and surgeons will strike upon some plan reducing this great mortality rate.

WOUNDS OF THE HEAD IN WAR SURGERY.

BY

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Owing primarily to trench fighting and the bursting of high explosives in the air, the head is a frequent site of injury in modern warfare. At the beginning of the present war, nine-tenths of all head injuries never reached the surgeon, but as the use of steel helmets and other forms of head protection became more and more general,

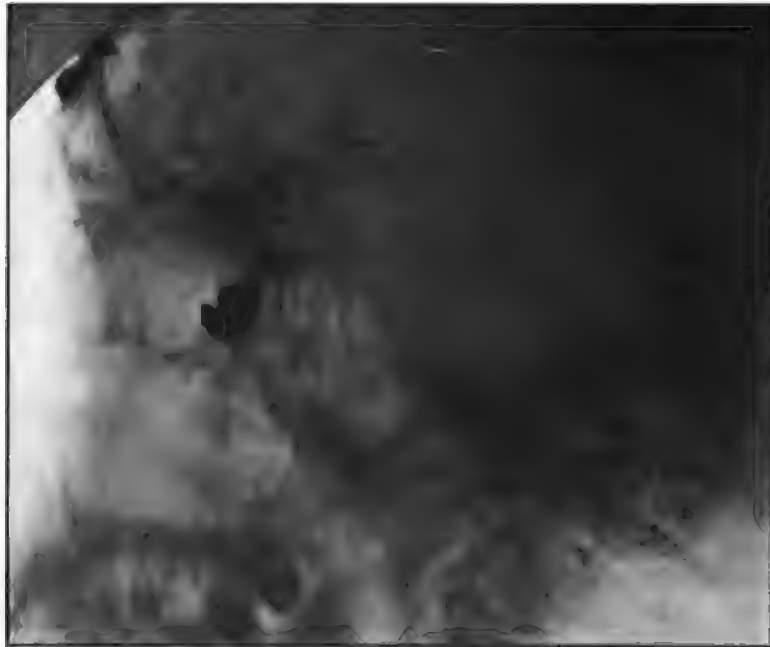


FIG. 1. Exterior superficial wounds caused by pieces of an exploded hand grenade.

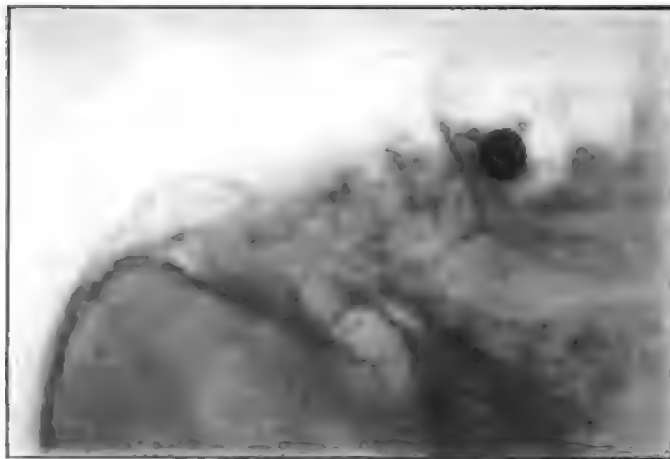


FIG. 2. Exterior deep wound caused by shrapnel ball.

these wounds began to assume a lessened severity and occupied a greater area within the field of war surgery.

Injuries of the head caused by bullet or shell can be classified simply into *exterior* and *interior*. Exterior wounds may be subdivided into *superficial* and *deep*; superficial where only the scalp, or soft parts are affected, and deep where there is injury to the bone without affecting the brain or its covering. When the projectile lodges in the scalp or bone we have an *incomplete* wound; and a *complete* wound when an entrance and an exit presents as when the head is struck at a target. Interior wounds are those where the projectile penetrated the skull into the brain or its covering, and may be *parietal* or *central*, *complete* or *incomplete*. I hope the above classification will be generally accepted.

Also coming under the scope of the war surgeon are head wounds caused by blows with the butt of a rifle, by bayonet, and by pieces of flying stone, the last occurring very frequently in the fighting around the Tyrol districts where the mountains are of rock which when struck by a shell is shattered in all directions doing considerable damage. The following paragraphs deal only with the immediate treatment of head injuries.

All wounds of the head should be considered serious and should therefore receive immediate attention as the patients' lives are in actual danger. X-ray photographs, antero-posterior and lateral, should be taken of every case no matter how slight the injury may appear, and the wound examined under anesthesia, if the patient is not unconscious, in a room where operation can be performed at once if necessary. Anesthesia allows for a complete examination, which is of paramount importance. Small

wounds should be enlarged by incision, the edges retracted, and the bone exposed for thoro examination, for what may seem to be an innocent wound may after all show extensive involvement of the bone and brain.

No matter what the cause, all wounds are more or less infected, and they should as such be treated. Exterior superficial wounds are thoroly cleaned with hydrogen peroxide and the hairs in the adjacent area shaved off. The wound is then extended in the direction of the bullet canal, or the wound of entrance is joined to the wound of exit, to facilitate careful examination. After extracting the projectile and painting with tr. iodine, the edges are sewed up with the ends left open for the insertion of sterile strips of gauze, and a tight bandage applied. If no rise in temperature occurs after two days, the strips of gauze are taken out and a plain sterile dressing suffices. I have found the application of balsam of peru to be very effective in these simple wounds, healing occurring by primary intention. If the wound is badly infected, a soft perforated rubber drain is passed thru both ends, a fresh dressing being made every day until temperature falls to normal. Fig. 1 shows an X-ray photograph of exterior superficial wounds caused by pieces of an exploded hand grenade.

Exterior deep wounds, or where the skull has been injured (Fig. 2) are very rarely simple when occurring in the cephalic portion of the head. Thoro examination may reveal only slight injury to the outer plate of the skull, while the inner table may be extensively shattered causing great injury to the brain. An X-ray picture is indispensable, and even with this the surgeon may fail to discover a serious condition. To give the patient the benefit of the doubt, trephining



FIG. 3. Interior parietal wound caused by shrapnel.

should be performed in every case of skull fracture. The sooner the case is operated upon, the better chance is there of recovery, especially urgent being those cases brought into the hospital unconscious. It is difficult to lay down a definite rule as to how much bone should be trephined. Each case should decide for itself. The best I can advise is that if the surgeon, with the knowledge of the symptoms and signs and with

the help of the X-ray, is definitely sure that he has removed every loose piece of bone, foreign body or bone splinter, then the operation is completed with the insertion of sterile gauze and the application of a sterile bandage. This procedure, especially with interior parietal wounds, can only be accomplished by further injuring already macerated brain tissue, but it is well to remember that the prognosis is then much



FIG. 4. Interior central wound caused by shrapnel.

more favorable than when a piece of bone has been allowed to remain. In searching around brain tissue, the location of the important centers should be borne in mind. One can cut into the occipital and frontal portions of the brain with more safety than in the lateral portions, but the search for a foreign body should of course be made first along the canal of entrance. Fig. 3 is an example of an interior parietal wound in the occipital portion of the brain.

Where the projectile is deeply imbedded within the brain tissue, as in interior central wounds, operation is useless, except

distinct vision. Sensation was only slightly impaired, pulse rapid and feeble. The following day, the pulse went down to 50 and the patient died, autopsy showing extensive hemorrhage with severe laceration of tissue.

Complete interior wounds, or where the projectile completely traversed the skull are far more favorable, the result generally being a partial paralysis or even complete recovery, depending upon the centers affected.

Fig. 5 presents an interesting case wounded by the severe blow of a bayonet or lance, the patient not being quite sure

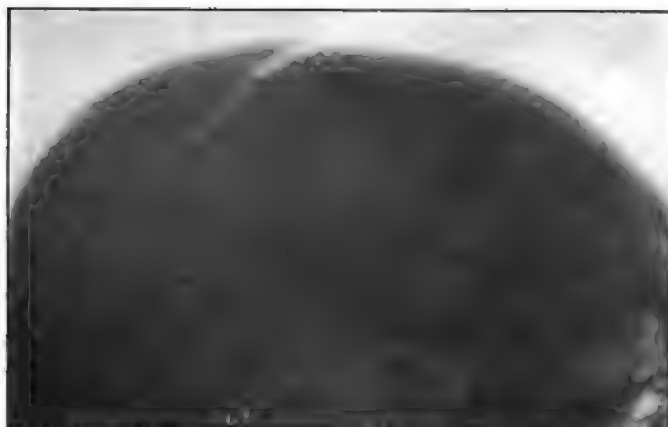


FIG. 5. Interior parietal wound caused by bayonet.

in the extraction of superficial splinters. These cases seldom reach the base hospitals and are unconscious most of the time with a more or less paralysis and a high temperature. The prognosis is always bad, particularly with the presence of meningitis. Fig. 4 represents a case that came under my care in an unconscious condition two days after being wounded. He had paralysis over the entire left side, and operation showed extensive hemorrhage over the right frontal lobe. Three hours after the operation, the patient regained consciousness and complained of headache, dizziness and in-

how and with what it was delivered, except that his attacker was on horseback. The wound was badly infected, and the trephining away of the free pieces and splinters of bone left a hole the size of a silver dollar. Sterile gauze dressings only were applied daily, and the temperature fell to normal at the end of two weeks.

The prognosis of head wounds depends primarily upon the site and extent of the injury and the status of each individual case. Lacerations of the frontal or the occipital portions of the brain are not as dangerous as of the lateral portions or base.

This of course is due to the location of vital centers varying proportionately in importance. Subdural or intracerebral hemorrhages seriously affect the prognosis and all postoperative cases should be watched for secondary hemorrhage. A very serious complication, occurring generally from two to four weeks after injury, is the formation of a cyst or of an abscess of the brain, the result of a retained piece of bone or other foreign object somewhere within the brain substance. This latter condition is particularly fatal where there is involvement of the ventricles. Meningitis is always a bad sign following injury to the skull. It is gratifying to note the gradual disappearance of paralysis in many of the cases that recover, but a paralytic may be considered hopeless if no improvement occurs after five or six months' treatment.

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RESUME OF WAR SERVICE IN BELGRAD, SERBIA.

BY

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Altho there have appeared in the American medical literature many papers upon the surgical and medical services of the present war, the author ventures to produce yet one more paper upon the surgical work at the military hospital, Belgrad, Serbia, during the spring of 1915. His apologies for so doing are that an unusual condition in the present war existed at that time, and that it affected markedly the organization of a surgical service and the type of cases

encountered. This condition was the typhus epidemic of 1914-15.

There have been other allusions to this typhus epidemic, discussing it from both a clinical and scientific standpoint. The author has referred to it in two other papers, one appearing in *Washington Medical Annals* of December, 1915; the other in the March number of the *New York State Journal of Medicine*. In addition, numerous writers have expressed their views and impressions of this same epidemic.

The author will limit himself in this discussion to the surgical aspects of the war service conducted by American Red Cross Units 1, 2 and 3, in the military hospital at Belgrad.

Before considering the work itself, it is not amiss to describe the position of this hospital, or "Voina Bolneetza," with respect to the combatant troops. Located as it was upon a hilltop within the city limits of Belgrad and close to the banks of the Sava River, it commanded a full view of the theatre of operations, and was not more than three-quarters of a mile from points of active combat. From the Austrian shore, it was plainly visible, but assurances had been made that the neutrality of this hospital ground would be respected by the Austrian forces, and that neutrality was respected.

During the months discussed in this paper, a condition of comparative peace and quiet existed at Belgrad, altho heavy operations were taking place in the Carpathians, as the great Russian advance of early 1915 was still in progress. The typhus epidemic had reached its full height and was just beginning to wane. The Serbian army was in no physical condition to undertake an active offence; the Austrian forces were en-

gaged in meeting the Russian advance, and it is doubtful whether at that time the generals on the Austro-Hungarian side would have risked an army in the typhus infected Serbian territory. Whatever actions took place were limited to artillery duels, desultory bombardments of the cities of Belgrad and of Zemlin on the Austrian shore, aerial combats and brushes between the Serbian and Austrian patrol boats on the river. Consequently there were comparatively few casualties.

This was decidedly different from the experience that the American Red Cross Unit No. 1 had passed thru when, together with the city, they had changed hands from Serbia to Austria, and two weeks later back to Serbia again. On that latter day some three thousand wounded were brought to their hospital. In like manner these days were different from the storming of Belgrad in October, 1915, when the personnel of the American Red Cross passed, with the city from Serbian control to Austro-German. Again an overwhelming volume of work poured in upon the hospital within a few days' time.

Nevertheless, in spite of the comparative peace around us, it was necessary for the American Red Cross staff to combat the effects of the typhus epidemic. The working forces had been seriously depleted thru sickness, for it was impossible to keep the epidemic from gaining access to the very staff members themselves. Conditions on all sides were chaotic. Transportation was slow, irregular and extremely uncertain.

Typhus was not the only infectious or contagious disease to be guarded against. There were also present relapsing fever, typhoid fever, diphtheria, smallpox, measles

and at one time there was a small outbreak of plague in a city not far from Serbia.

Those familiar with the organization of the sanitary service in time of war will recognize that there are several types of hospital formations, from the simple regimental aid stand to the elaborately equipped base hospital. On account of its proximity to the combatant troops, the "Voina Bolneetza" played all of these roles. Cases were not infrequently brought directly from the point at which they had received their wounds. Regimental commanders and other nearby units transferred their wounded directly to this hospital which thereby served as a field hospital and evacuation hospital. Wounded cases might be sent by rail into the interior of Serbia. However, very few cases were so evacuated. It was the rule to hold patients at this point for definitive treatment. Such was the original purpose of the institution, and for such purpose it was excellently adapted.

There were no motor ambulances, there were no horse-drawn ambulances to bring the wounded to the hospital. The method of transportation was by rough, two-wheel ox carts, essentially slow, and inevitably exhausting to the patients.

The surgical cases did not differ widely from the type of surgical cases to be found in other war hospitals. Again as with other war hospitals the volume of work and the number of wounded varied with the degree of military activity upon that front. As has been indicated, the sources of the patients were the immediately adjacent troops and other military formations, and also the field hospitals within transportation distance of Belgrad.

In common with the experience in other military hospitals, the greater part of these

cases consisted of compound fractures or other wounds of extremities and head. Practically every case was infected. The author can remember only two cases which reached the hospital with clean wounds, one a rifle bullet wound of the muscles of the thigh, the other a rifle bullet wound of the foot. The types of infecting organisms could not be determined as the staff was not sufficiently large to permit of any member being detailed to laboratory work, or even spending a part of the day thereon. However, it may be noted that gas-gangrene was not encountered, and that the majority of the infections pursued a rather mild or slow tedious course.

In our methods of combatting infection we were limited, on account of staff numbers, and inability to procure any but the simplest apparatus; and the general method used was the early removal of all foreign bodies and devitalized tissue, securing adequate drainage and careful attention to the wound afterwards.

Carrel's boon to military surgery had not then been announced. Even had it been announced, it is doubtful whether we could have made use of the Dakin solution, for there were few pharmacists or chemists on whom we might safely depend to compound our solutions, and but a limited supply of any given drug.

In addition to the ordinary cases of military surgery, we encountered a group comprising 25 per cent. of the operative cases. This group consisted of the unfortunate after-results of typhus, including gangrene of the lower extremities from toes to thighs; gangrene of hands and fingers, otitis medias, mastoid abscesses, parotid abscesses, where huge sacks of pus would form in both parotid regions, the glands lying as a free

slough within the abscess cavities. There would also be encountered tremendous abscesses involving whole extremities, limited only, apparently, by the heavy fascial planes and bony parts at the ends of the affected limbs. Muscles would be found gangrenous and necrotic as free sloughs within these abscesses.

Fortunately, these sequelae occurred only in the minority of typhus cases. These complications did not appear during the acute course, but came on during the first week or two of convalescence. Among the cases to which we were able to devote our best nursing attention, there were very few unfortunate sequelae, with no cases of gangrene. However, among the cases which passed thru their acute typhus in the small, ill-equipped, outlying Serbian field hospitals, a very appreciable percentage of patients developed these unfortunate after-effects. Undoubtedly, poor nursing and lack of water during the acute course were contributing factors in the production of post-typhus gangrene.

The etiological cause of this gangrene was described, at the Congress for International Medicine held at Warsaw in May, 1916, by Von Franckel. He noted a constant change in the blood vessels consisting of a periarteritis nodosa with the formation of multiple circumscribed nodular thickenings only demonstrable microscopically. When these changes caused stenosis or thrombosis of the blood vessels of the extremity, gangrene supervened.

The surgical treatment of these conditions was necessarily disheartening on account of its inevitably destructive nature. Cases which came in with well-marked gangrene permitted of no methods to save the affected tissue, and therefore, destructive surgical

operations such as amputations and disarticulations were called for. Furthermore, the patients themselves were in no fit condition, after having passed thru their acute typhus, to undergo further hardships, and many succumbed to the surgical procedures that were necessarily instituted in their cases. Also the tissue with which we had to work was largely devitalized and resembled cooked meat rather than living flesh. Even tho amputations were carried out well above the line of demarkation, the healing was slow, the flaps failed to unite in an appreciable number of cases, and tho no infection could be demonstrated as underlying these surgical failures, still the wounds remained in a sluggish condition and they frequently required secondary intervention.

All cases coming to this hospital, whether surgical, medical or contagious, were admitted thru one building specially designated for that purpose. It is true that an effort was made to weed out infectious cases prior to admission but that was not invariably successful, and occasionally such a case would escape the surveillance of the Serbian officers and reach the American division of the hospital. In this admitting pavilion, care was taken to prevent the entry of any typhus infected lice or other vermin. Unless the case was very seriously injured or sick, they were made to pass thru a bathing department in which every incoming patient was stripped, had all the hairy parts of the body closely clipped, received a coal oil shampoo to all such hairy parts and then a warm tub bath; after which he received a freshly laundered suit of hospital clothes and was forthwith admitted to the observation room. All clothing, clipped hair and everything that had come from the body of the patient was collected upon a sheet and immediately forwarded to the large

steam sterilizer for disinfection. The main work of the observation ward was to determine that every case was thoroly deloused and rid of all other vermin. It was generally enough to retain them in the observation ward for two or three days; if at the end of that period no lice could be found upon the patients, it was fair to presume that they were entirely lice-free. Also, while in the observation ward, the occurrence of any unexplained fever or the appearance of a suspicious rash or other symptom would serve to put the admitting medical officer on his guard. It is to the credit of the American doctor who supervised this work in May, 1915, that but one case developed typhus after being transferred from the observation ward to the surgical department of the hospital.

Surgical cases received their first surgical examination and attention in the observation wards. Just as soon as they were proven to be free of vermin, they were transferred from these observation wards to the surgical admitting pavilion. Slightly wounded, or those requiring minor operative procedures were cared for in this pavilion. The more serious cases that had to pass thru the general operating room were examined in the admitting pavilion, thoroly worked up there, and then were transferred thru the operating room to the several wards devoted to the care of the seriously wounded, or major operative cases. There were three such wards, and the cases were distributed among them so as to keep the clean or comparatively clean cases in one ward, the mildly infected cases in another ward, and the badly infected cases in a third. Another pavilion was set aside for convalescing and ambulatory cases. This pavilion formed the ultimate destination of all surgical cases. If there had to

be crowding anywhere, and occasionally there was overcrowding, we preferred to have it in this pavilion rather than in the wards for serious cases, or the admitting pavilion. As noted before, all minor cases were cared for in the admitting pavilion, an effort being made to dispose of such cases at the earliest possible moment in order that the hospital would always be ready for an increased number of admissions as it was uncertain when military activity might be resumed, especially as the summer drew near and the typhus became more and more a thing of the past. Even so, it was always difficult to secure the discharge or evacuation of any cases, regardless of the number of patients within the hospital. The Serbians apparently desired to retain all patients in that hospital until they were unquestionably ready for discharge.

So far as I have been able to ascertain, the American Red Cross Units in Serbia were the only American Red Cross Units that were expected or requested by the government under whose direction they worked to assume the care of venereal cases. It may be, that inasmuch as the American Red Cross Units were operating in the military hospital of Belgrad whose doors were open to all enlisted men and officers of the Serbian army, that they inevitably had to assume the care of such cases. At all events, they comprised a fairly large group of cases and an effort was made to segregate them under the care of one of the staff doctors, with a corps of Austrian orderlies to assist him, in a part of the institution where their care would not fall upon the American nurses.

As already mentioned, the seriously wounded and those cases recovering from major operative procedures were distributed among the wards of the main

hospital building where they were grouped according to the presence or absence of infection in the individual cases. Each day the entire number of surgical cases were visited and those most urgently demanding operation were listed for the general operating room the next morning. It must be borne in mind that all recent cases received immediate attention, but that the great bulk of our operative work was selected from the post-typhus sequelae which came into us from the outlying hospitals, and from old surgical cases that had never received definite treatment. In common with other military hospitals, it was always necessary to secure the permission of the patient prior to any operative procedure. It was interesting to note that on arrival approximately ninety per cent. of all patients were thoroly averse to any operation whatever, but that gradually, after the lapse of a few days, their aversion disappeared and they willingly submitted to measures which were calculated to relieve their pain and afford them the best possible functional results. The patients who had already been operated on were no small factor in instilling confidence into the newcomers. In a few cases where the patients reached the hospital unconscious on account of their injuries, we made it a practice to secure the sanction and approval of the Serbian medical officer in command of the hospital before proceeding with any operation.

The hospital was well equipped in regards to operating rooms, sterilizing plants, dressing rooms and scrubrooms. Before leaving New York, a very complete surgical equipment had been secured for the units by the American Red Cross and by additional purchases with private funds. There was also a complete supply of instruments, anesthetics, suture materials,

dressings and all other accessories to an efficient operating room.

From the limited number of doctors available in Belgrad, two doctors were detailed to the surgical service, devoting their full time thereto, in the operating room and in the wards. These were respectively the surgeon and the assistant in the operating room. One member of the nursing staff was detailed as an anesthetist; another member acted as sterile nurse at the time of operations and prepared the necessary supplies for the next day's work in her free afternoons. The remaining personnel was drawn from Austrian prisoners, acting as hospital orderlies. One acted as general assistant to the operating room nurse, and two others performed the office of litter bearers in bringing cases to the operating room and returning them to their proper wards. When operations were not in progress, these several orderlies assisted the operating room nurse in her duties, and worked under her direction. Once trained to their duties the work of the orderlies proceeded smoothly and without a hitch. It was enough to publish at noontime, or in the early afternoon, the list of operations for the following morning with the location of the patients and their designated disposition after operation, and no further thought had to be taken as to the conduct of the day's work.

Those who filled the position of operating surgeons had also to assume the full burden of the aftercare of the patients in the wards. It was advisable to place in charge of each ward a thoroly trained nurse to whom could be trusted much of the subsequent dressing and treatment of the patient. It was impossible for the two men on surgical service to dress every case every day, and therefore the great bulk of

dressing and other work fell upon the nurses in charge of the wards.

The American Red Cross had selected its nursing staff with very great care and great credit is due to the several members in Belgrad for their very efficient work.

It is impossible to conclude without making a strong plea for medical preparedness in this country. War, in the present day, is conducted on a gigantic scale. It is not only a war of men as individual fighting units, but it is a war of brains and science, of organization and executive ability. That army which is most thoroly trained and most efficiently supplied with effective weapons, and best served by its several staff departments, must necessarily excel. It is only by months of training and by the thoroly education of the personnel of the staff departments in their duties that an army worthy of the name can be produced.

The medical department is not exempt from these requirements. Charged as it is with the selection of physically fit individuals, the preservation of their health, the eradication of preventable diseases, and the speedy relief of the wounded and sick, it must of necessity occupy an extremely important position in the military scheme. It is only by a degree of organization and training that is wholly unknown to the average civilian physician, that an effective medical corps can be sent into the field.

The present commissioned medical personnel of the regular army and of the organized militia is inadequate in numbers to care for the needs of the huge army under contemplation. The remaining necessary medical officers must be drawn from physicians now in civil practice, but not until these civilian physicians have learned the intricate duties of army medical officers can they be of full value to the troops whom

they serve, and to their country. The duty, therefore, devolves upon the profession as a whole to prepare itself for the service which it may soon be called upon to render. Adequate preparation means formal enrollment in some branch of the federal service or in the American Red Cross, careful study of the problems of military medicine, and an unselfish willingness on the part of each individual to perform such duties as may be assigned to him by competent authority.

THE TECHNIC OF THE USE OF IODINE.

BY

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During a portion of the time in which the writer was investigating the matter of the employment of iodine, he was reading Professor Ernest Carroll Moore's book "What is Education?" That book was a constant help and inspiration. Its subject matter was foreign to antisepsis. Nevertheless its viewpoints were of universal application. One statement in that book was to the effect that we must not put new wine in old bottles because the old bottles are not sanitary and the drinkers might be poisoned. Another thought that seemed pertinent to the work in hand was: Theory or thinking grew out of practice, problems came out of doing; if doing could go on smoothly and un-failingly without jolts or jars, then there would be no problems nor any mental straining to solve them. What seems clear is, that the truth is an arrangement which most nearly answers my need (no attempt at quotation of context is intended).

In regard to our information about

iodine, from its discovery in 1812 to Magendie's researches into its antiseptic value in 1852, probably all that was said about it was true; but from 1852 to the present day there has been a constant pouring into old bottles with the changes rung on tincture and liquor until it is about time to get a new clean bottle for a change. The tincture will tan and the liquor will macerate so that the men of two generations ago substituted the application of a saturated solution of iodine of potassium when several coats were to be painted on and deep penetration was desirable.

Even now, a few comparisons with the effects obtained from other methods will certainly make a careful observer pause and consider whether possible good results really do counterbalance assured destruction of tissue. Many forms of liquid preparation were tried, discarded and replaced. The problems did come from doing and eventually the solution known as "Stewart's iodine" or "Nascent Biniodide" was adopted. It is calomel gr. i, tinct. iodine, glycerin and alcohol of each two ounces. It is a solution of iodine plus nascent biniodide of mercury and it acts quite as it might be expected to act.

Another matter that came as a discovery from doing was that fungoid granulations might arise from friction, from sepsis or from both, that iodine was a good antiseptic, yet when applied as a means of arresting such granulations it was often very unsatisfactory; much inferior to silver nitrate and in no way comparable to excision with scissors. Another lesson which showed that the doing went with a jolt and jar was the sad results obtained by putting iodine into clumsy or unskilled hands, results which made healing slow indeed. A

safe preparation was necessary for employment by the untaught patient himself. This was finally obtained by rubbing calomel gr. i, sodium chloride gr. ii, iodine crystals gr. iii, a few drops of ether and gr. 1500 of liquid paraffin. This mixture is a fine wine color at first; but turns a dark green on standing. Should there be a precipitate the addition of a little ether plus a violent shake or two will pick up the deposit.

This liquid penetrates the layers of a gauze bandage and runs down to the wound more readily than water, it does not dry quickly, it neither macerates nor tans tissues, it has no odor, it does not turn rancid, the tissues cannot absorb it and when applied in small amounts hourly or oftener the bandage need not adhere to the wound. Adhesion is purely a matter of care and thoroughness—or their lack. The effects of this preparation when injected into suppurating sinuses or fistulae are often most gratifying. And in its favor may be urged the absence of the foreign body effects of bismuth and other pastes. Should it fail upon prolonged trial it does not prevent the use of pastes inasmuch as no permanent plugging is performed.

In many cases of bacteriemia there is a decided value in the internal administration of iodine. Especially so when streptococcus viridans is demonstrable in the blood. This formula has proven so good that no change has been made in it since the day it was suggested by Dr. Thomas S. Blair of Harrisburgh; viz.: Tinct. iodine 3ss, Fowler's solution 3i, Aq. 3iv. M. Filter. Sig. 3i after each meal. It should be taken well diluted.

It has been maintained that much of the present writer's success in the rapid healing of septic wounds is due to his method and

practice of splinting. A splinted wound should heal faster than an unsplinted one; but it suffices here to mention that the splints are laid a scant half inch from either edge of the wound, they are made from the stiffening material used in boning ladies' lace collars and ruffs. The wound edges may be drawn together by narrow strips of plaster which pass bridgeliike over the bone-stiffening. Such splints tend to prevent motion of the wound and consequent friction against the dressings while they fit the curves of almost any body surface; wherein lies their advantage over stiff or wooden splints.

The biniodide solution is ideal for preparing small sized catgut, for an application in furunculosis, carbuncle, acne pustulosa, etc. It is very easily made because one grain calomel tablets are common. One thing does seem to impair its efficiency and that is soap. The technic for abdominal or other operative work, for intravenous injection of any sort, or for a preparation for serum or bacterin by hypodermic use may be imagined.

Gall-bladder surgery is about the worst form of laparotomy wound to heal. If time suffices then a lavish coat of the nascent biniodide solution should be applied the night before operation, should be covered with a sterile bandage and this coating should be repeated at the operating table. The final step, after the operation is completed, should be to apply a third coat to wound, stitches and their neighborhood. After this a wipe soaked in the iodine-paraffine should be made to cover the wound and all should be bandaged in the usual manner. The paraffine-iodine may be soaked thru the dressing several times a

day and it does not appear to attack rubber in tubing or sheet.

In the treatment of ambulant cases the patient is given a bottle of the aforesaid iodine-paraffine and allowed to soak a half-teaspoonful (more or less) thru his bandage and along the line of the wound. On occasions when a change of bandage was to be avoided a nurse or other attendant would use a good sized oil-can and simply pour a sufficient quantity on the outside of the bandage. The doctors who ultimately received such a patient and removed the bandage appeared to be impressed with the fact that the wounds were not macerated, were not tanned and were altogether in better condition than were those received from other sources. The scabs are often very thick. This means where the scab is healthy and dry that none of the glue, which escaped from the wound, which usually penetrates the gauze dressing and which is usually torn off with the renewal of that dressing, has followed its usual course. It has not penetrated the paraffine soaked pad and the scab formation is complete and unaltered by any change of dressing.

Wounds that follow operation for osteomyelitis or surgery for bone tuberculosis may be much benefited by an hour's soaking in warm water and lime water equal parts. To the lime water has been previously added for each eight ounces 1 grain of calomel, 2 grains of table salt and 3 grains of iodine crystals. The whole fluid is almost colorless. After soaking the biniodide solution and iodine-paraffine are applied as usual.

Surgical mayonnaise has had a very favorable reception and the following improved formula is suggested: Calomel gr. i; NaCl gr. ii; iodine crystals gr. iii in eight

ounces of Carron oil. It still has advantages when bandages are to remain unchanged for a length of time (e. g. in burns, etc.).

The use of nascent biniodide solution in gynecology, diluted for douches, and for dental work has received commendation but is a matter that is a trifle foreign to the present paper.

AN ANTE-BELLUM STUDY OF THE KAISER.

BY

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"Now that you have donned my uniform it must be your pleasure and your duty to follow my wishes, realizing that I rule Germany by the direct will of God, and you must willingly obey my commands, even tho I require you to shoot down your own fathers and brothers in response to my dictates."

—The Kaiser to a company of new recruits.

Ten years ago in Germany they called him the "Peace Kaiser." Today he is universally execrated outside of his own and allied countries, and in London "The Potsdam Scoundrel" is the favorite epithet applied to him by his British cousins. Before the great war anyone who in Berlin chanced to hear a well informed German prating of the peace ideals of the scion of the house of Hohenzollern, must have appreciated that the speaker held his tongue in his cheek, and that a quizzical expression lurked in the depths of his eyes. To give a Hohenzollern a great army or a powerful navy, and expect him not to use it in a war of aggression, is like giving a small boy a drum with the hope that he will not beat it. One who has visited the Zeughaus in Berlin, that great arsenal, un-

rivalled museum, and gallery of military paintings devoted to the apotheosis of war, containing an example of every fiendish invention designed to mutilate and destroy life, from the early middle ages to the present day, must have appreciated that the ideals and the traditions of the house of Prussia, and the examples held up to the imagination and emulation of the German youth, were not exactly those of peace.

As a matter of fact, from the earliest annals of the house of Hohenzollern, from the time when they emerged from their obscurity as robber barons and petty Margraves in Suabia, down thru the Electorate of Brandenburg to the present day, the Hohenzollerns have been consistent and determined foes of democracy and violators of popular rights, champions of wars of aggrandizement, and upbuilders of absolutism. Von Bethmann Hollweg was not the first servant of the Hohenzollerns to reduce serious treaty obligations to a "scrap of paper." Frederick the Great with cynical and brutal contempt for his pledges solemnly entered into, violated the Pragmatic Sanction and without a shadow of excuse despoiled the young queen of Austria, Maria Theresa, of her fair provinces of Silesia, and was later also the plunderer and assassin of Poland. Bismarck in 1870 garbled the Ems telegram of Benedetti with a criminal disregard of the rights of diplomatic correspondents, and precipitated the Franco-Prussian war.

Frederick William, the Great Elector of Brandenburg, who was the first of the Hohenzollerns to achieve a prominent place in history was descended from a long line of insignificant noblemen engaged all their lives in encroaching upon the charters of the free cities in their jurisdiction, baiting

Jews, and imposing unpopular and excessive taxation on the beer and scanty food of their miserable subjects, to meet their own debts and repair their ruinous finances. The great Elector was a real Hohenzollern in his disregard for treaty rights and the happiness of his people.

Tuttle in his history of Prussia, a writer partial to, and apologetic for the sins of the upstart Prussian dynasty, quotes as follows from an official complaint of the municipal council of Berlin:



FIG. 1. Wilhelm II.

"Friend and foe have made the land a desert. The officers who ought to protect it, levy vast tributes for their own use, live luxuriously, refuse to pay the soldiers, and force them to desert or starve. Against the electoral dragoons neither property nor life is safe; and the fields of the peasants are abandoned. All industry is prostrate. Towns and villages are in ruins; for miles and miles one will find neither people nor cattle, not a dog or cat. And yet the war contributions are rigorously exacted.

From the people have been taken their houses, gardens, crops, vineyards and given to the officers, who are free from taxes, while the owners are crushed by the burden of taxation. The officials, the clergy, the teachers cannot be paid. Many have been driven to end their own lives by drowning, by the halter, or by the knife; and the rest are preparing to leave their homes with wife and child and wander abroad in the bitterest want."

This writer who usually endeavors as far as possible to say something good of the Hohenzollerns, thus summarizes the character of Frederick William, the Great Elector, who died in 1688:

and disappointment, he kept the one great object of his life—the vindication of his own will as the supreme authority in the state—immovably before his eyes; and in this he was brilliantly, but deplorably successful."

The next conspicuous Hohenzollern is the uncouth, cruel and niggardly father of Frederick the Great, who beat his drill sergeants and soldiers, frequently struck and brutally chastized his unfortunate daughter, Wilhelmina, and imprisoned and would have murdered his own son. Of him, the second of the line of kings in the newly created monarchy, the historian says:—



FIG. 2. The Kaiser and his uncle, the late King Edward.

"As soon as treaties with foreign powers gave him the pretext, and an obedient army the means, he came openly forward in the character of a prince determined to destroy local freedom in all the provinces which events had brought under his sway."

"He must be judged chiefly by his acts; and if these seem to give a higher opinion of his talents than of his morals, of his achievements than of his measures, it is the fault of inflexible history, not of the impartial historian. And in some fields of action, as foreign politics, not even his talents were always skilfully employed, not even his achievements were unmingled and indisputable blessings. But in the midst of vacillation, of tentative schemes, of failure

"Rival states learned to have no confidence in the King's treaties or in the King's battalions."

"An oppressive system of taxation which harshly and greedily searched the pockets of every subject; an enormous and costly army, which failed to justify its existence even by the poor logic of victorious wars; a vicious policy of state patronage, which deranged the laws of productive industry; a centralized civil service, which hourly intruded upon the most sacred private interests; the nearly complete obliteration of the Diets, which had once spoken to the Prince with the voice of the people; the unrelenting severity of the laws and the courts, which the King still found inadequate to

the needs of justice; a widespread network of police, and spies, and informers, against which the purest citizen was not secure; and at the summit of all this a monarch whose tastes were low, passions coarse, and nature cruel, who valued the material above all other interests in the state, and who strode about among his subjects with ever uplifted cane, ever ready to strike. Such were the elements of a social condition, in which the people of Prussia vainly struggled to be contented, cheerful, and happy. It is beyond doubt that during this reign the general feeling of the people was one of sombre yet helpless discontent."

dominions and see his name in the gazettes."

If it be true that heredity and environment are the two most important factors in the development of human character, then it is in this historical background, imperfectly sketched, that we must look for light in obtaining a just estimate of the purposes and nature of the ruler of Germany today.

For more than ten consecutive years Kaiser Wilhelm II has spent a summer holiday cruising in his yacht, and attended



FIG. 3. Balholm on the Sognefjord.

Frederick the Great, the unhappy son of this man, was indeed a military genius of the highest order, but cynical, rapacious and bent upon aggrandizing himself and his own country at the expense of his neighbors.

Does not this quotation from Macaulay regarding Frederick's invasion of Silesia apply with singular exactness to his descendant, the ravisher of Belgium, today?

"Yet the King of Prussia had already fully determined to commit the great crime of violating his plighted faith, of robbing the ally whom he was bound to defend, and of plunging all Europe into a long, bloody and desolating war, and all this for no end whatever, except that he might extend his

by a few of his ships of war, along the west coast of Norway, a land much sought by the discriminating tourist from every country, on account of its scenic beauty, simple unconventional life, and opportunity for all manner of outdoor sports. It is somewhat remarkable that in these frequent trips to Norway, he is never accompanied by any of his family. He may possibly be one of that not inconsiderable number of married men who have learned from experience that a holiday spent with one's family ceases to be a holiday. One of the time-honored traditions of the Hohenzollerns is that the reigning head should not

be on good terms with the crown prince who is to succeed him.

Probably the most beautiful spot in the Scandinavian peninsula is Balholm on the Sognefjord, consisting of a small group of peasant cottages and fishermen's huts, with a few unpretentious villas and two hotels, looking out on the broad expanse of fjord and mountain in front, and against a background of splendid glaciers and snow-capped peaks.

This idyllic spot had been for many years the summer meeting place of choice spirits

the armored cruiser "Stettin," which anchored in the fjord a stone's throw from the hotel. There was a flutter of excitement as a group of trim sailors from the "Stettin" rowed up to the little dock, scrubbed down the stone steps leading up to the hotel grounds, and made secure the landing stage, that the imperial owner of the "Hohenzollern" might safely come ashore. A direct wire was also strung from the telegraph station to the yacht. The little pier was decorated with garlands and greenery by the ladies of the hotels, and



FIG. 4. The "Hohenzollern" at anchor.

and lovers of Norway from many countries, and was also on account of the international life and agreeable society a favorite resort in diplomatic and university circles of the Norwegian people themselves.

Six years ago it was whispered about the hotel corridors and balconies that the German Emperor was coming to make a visit to Balholm. In a few days these rumors were confirmed by the appearance of the long, graceful lines of the yacht "Hohenzollern," of the dispatch boat "Sleipner" and

every one prepared for a first glimpse of the War Lord of Germany. Soon a launch was observed being lowered from the "Hohenzollern," and thru a glass, His Majesty was seen to take a place in the stern of the boat, accompanied by several of his suite, and the two imperial dachshunds that are his inseparable companions on his trips ashore. He was on this occasion dressed in a blue yachting costume. He is rather undersized and there are only two features which would distinguish him in a crowd.

These are his keen, observing, blue gray eyes with a glitter suggesting polished steel, and his erect, somewhat theatrical bearing, which in spite of his withered, undeveloped, left arm, suggests the conventional idea of royalty, which in his case is emphasized by a colossal ego and an ever-present consciousness of his divine right.

The hand of his withered arm, for which he blames the English accoucheur who attended his mother in her confinement, is small, white, soft, and shapely like that of a woman, and bears upon the third

improved by a first-class English or American tailor. His trousers are too tight, his shoes are badly shaped and turn up at the toes. On his trips ashore he frequently wore a brown, cigar-colored suit, a pink shirt, and a straw hat with a red and white band. His most spectacular appearance at Balholm was on the occasion of a fire which threatened to destroy the place. Clad in a brilliant uniform and enveloped in a grey military cloak lined with scarlet, the Kaiser with the sparks flying about him, stood near the burning building



FIG. 5. Selecting the site for the Frithjov Statue.

finger a large seal ring. The eyes of the Kaiser recall Mirabeau's somewhat idealized description of the eyes of his ancestor, Frederick the Great as quoted by Carlyle:

"Most excellent, potent, brilliant eyes, swift darting as the stars, steadfast as the sun, gray, we said, of the azure-gray color; large enough, not of glaring size, the habitual expression of them—vigilance and penetrating sense, rapidity resting on depth."

He looks far less imposing in civilian clothing and his appearance could be much

and personally directed the work of his sailors in extinguishing the flames. The picturesqueness of the scene was enhanced by a turbaned group of scantily clad Lascar sailors on a big Peninsular and Oriental steamer which lay near the shore. They worked the pumps and sent a powerful stream of water from the ship upon the burning building, accompanying the swaying movements of their brown bodies with the crooning melody of a weird Vedic hymn.

A Chicago lady with a mania for auto-

graph collecting, emboldened by her success in having obtained the hieroglyphic signature of the affable little King of Siam, lay in wait for the Kaiser one day as he was returning from a walk along the beautiful country road bordering the fjord. Preceded by the tinkling bells of the imperial dachshunds, "Witch" and "Vagabond," the one black and the other liver

kindliness in the emperor's manner; there is even an expression of cruelty in his eyes, as I have seen them light up when he has beaten his little dachshunds with his heavy cane, in much the fashion, I fancy, that the father of Frederick the Great beat his children and his drill sergeants. Whenever these unhappy dachshunds so far forgot their imperial dignity as to sniff or bark at other dogs by the wayside, the Kaiser would straightway belabor them with his walking stick and beat them until they howled and yelped with pain and fear.

After the novelty of the Kaiser's presence had worn away the old frequenters of this secluded nook in Sognefjord recognized that Balholm was changed—and not for the better. More war ships from the North Sea Squadron anchored in the fjord, and soon our lovely Norwegian summer resort, with its idyllic quiet and peacefulness, was transformed into a noisy, German naval station. The dock and walks and mountainsides were thronged with officers, sailors, and marines; there was the constant tooting of steam launches; the rattle of anchor chains; the shouting of orders, the shrill boatswain's whistle; the bathing beach was polluted with the refuse and sewage from the ships; the sailors in a wholesale manner seined the fish from the fjords, causing a scarcity both in the hotels and among the peasants, denuded the mountainside and woods of wildflower and berries, and with singular bad taste and in violation of the hospitality and courtesy shown them, the Kaiser's officers were detected taking soundings and making charts of the adjacent coasts.

The ladies, however, especially the younger ones, were delighted with the large number of young officers, the bands from



FIG. 6. The Frithjov Statue.

colored, and accompanied by several favorite officers in his suite, the Kaiser approached at a brisk pace. One glance, however, at the military stride and grand manner *de haut en bas* of his Imperial Majesty caused the lady from Chicago to meekly fade away, without even an attempt to obtain the much desired autograph.

There is no suggestion of humor or

the men-of-war played extremely well, and the social life of the place was enlivened by several balls and affairs, concerning which there were many heartaches and disappointments, petty rivalries and social ambitions, which disrupted long standing friendships. One lady, an old summer resident is said to have wept for two days because she did not receive an invitation to a garden party given in the Emperor's honor. This party at the house of a local painter, became an annual feature. The music was given by the orchestra from the "Hohenzollern," and a dance was held on the lawn, after which the favorite amusement of the officers and guests was to stand on the shore and throw stones at wooden blocks floating in the water and rudely hewed into the shape of war ships, with empty beer bottles to represent the smoke stacks. Success in breaking these bottles was greeted with cries of childish delight. Such were the diversions of the German naval officer in his less serious moments. One would not have dreamed that these were the piratical blackguards who a few years later were to sink the *Lusitania*.

A number of the hotel guests were invited aboard the "Hohenzollern," which in its appointments is inferior to many yachts owned by members of the New York Yacht Club. It was openly said that the Kaiser desired to have a new one, but with his ambition for a strong navy did not feel that he could afford it. The "Hohenzollern" smelled strongly of bilge water. The music room is in gray and gold and the Kaiser's personal study is furnished and decorated in blue. Every inch of wall space on the yacht is covered with water color sketches and photographs, conspicuous among which were his relatives, the ruling family of

England, including many of his grandmother, Queen Victoria and the late King Edward. A very remarkable picture in this collection, repulsive in its ghastly realism, was one of the deceased queen upon her deathbed.

It is not believed that the Kaiser has ever had any very strong affection for Americans, and I was interested to note in his library, among a small collection of books for his personal use, that there was one entitled "The Preposterous Yankee."

Two years later on the occasion of his presenting to Norway a colossal bronze statue of Frithjov, a legendary and somewhat mythical Viking hero who is supposed to have lived at Vangsaes on the shore opposite to Balholm, there were a few Americans included in the invitation to the dedication of this statue, which was made a gala event. We were transported across the fjord on a German torpedo boat. The American Minister to Norway was at Balholm at the time of the dedication of the Frithjov statue. Whether it was an oversight or an intentional slight, our Minister did not receive an invitation to the exercises. Also no English were invited. Some thirty-five or forty warships were present, and the Kaiser, accompanied by the King of Norway, made the presentation address. Any one who has ever heard a young German officer make a speech must have been struck by the rapid, mechanical style of his delivery and his short clipped words. This speech of the Kaiser revealed the model which every mother's son among the officers of the German army and navy endeavors to imitate. The sharp staccato speech of the Emperor produced an effect not unlike No. 6 birdshot dropping into a tin pan, and if

one can imagine a machine gun making a speech, it would not be very different from the impression produced by his rapid fire oratory.

The statue is in the clumsy, lumpish style of modern German art, which is not unfamiliar to the tourist who has inspected the extraordinary rows of statuary in the



FIG. 7. The statue of King Bele.

Siegesallé in Berlin. This particular example which is intended to represent an early Norwegian sea rover, suggests more the Siegfried clad in stage armor, of a Wagnerian music drama. Figure 7 represents another of these atrocious pieces of statuary so inappropriately placed amid all the sombre natural beauty of Norwegian

mountain scenery. This is intended for King Bele, the father of Ingeborg, the heroine of Frithjov's Saga. One of the Kaiser's foibles is a strong penchant for setting up inartistic statues in unsuitable places, often thereby embarrassing the recipients. The statue of Frederick the Great given to this country a few years ago is another example of this eccentric taste. After seeing these statues one is tempted to paraphrase the line of Virgil and say: *Timeo Germanos, et dona ferentes*. A gift of German statues is a poor return for the violation of the rights of hospitality and the unwelcome invasion—even a peaceful invasion—of the territorial waters of a small friendly country. It is reported since the outbreak of the war that the Frithjov statue has been used as a receiving station for wireless messages in the service of German interests.

When a pasteboard model or cartoon of the King Bele effigy was being set up to give the effect before the statue was cast, the Kaiser seized a brush from the hand of the artist and himself filled in with rapid brushwork his idea of what the pedestal should be. He also negotiated personally with the owner of the land for the purchase of the site. I overheard him criticizing the price that was asked, telling the owner, who was a returned Norwegian-American, in fairly good English, that he had lived too long among the "Shankees."

Every Sunday morning the Kaiser preached a sermon to his officers and crew. He was generous in the distribution of brooches and scarf-pins among people whom he met or who performed any slight service for him. These pins were invariably a jewelled W in the manner of the famous Napoleonic N, and

at Balholm the proud possessors of the imperial tag felt an agreeable consciousness of their increased social importance. The second year he was at Balholm he held a great naval review in the waters of the Sognefjord, and it was indeed an imposing spectacle. Forty-two ships of war with thousands of sailors at attention on the decks and in the rigging, slowly steamed



FIG. 8. In spiked helmet and field uniform.

past the imperial yacht, each saluting with twenty-one guns, as the Kaiser from a little superdeck above the bridge, alone with God, reviewed with visible pride this array of battleships—so many of which have since been sent to the bottom, the Lord be praised, by the superior strength of the English navy.

Such are the observations I have made and the impressions produced, during the three summers I had a fortuitous opportunity to frequently see and study at somewhat close range the interesting personality of the German Emperor. He has the megalomania without the commanding ability of a Napoleon, all the selfish ambition but not the strong common sense of his own ancestor, the great Frederick. Fortunately the times have so changed that they are no longer favorable for unscrupulous dreamers of world conquest. The wrongs of a Poland or a Belgium today arouse the world to arms, and the threat of a tyrant "in shining armor" cannot terrify a tide of rising and triumphant democracy. These are fateful days for the Romanoffs, the Hohenzollerns, and the Hapsburgs.



Glycerin.—Some skins cannot tolerate even a small portion of glycerin.—*Med. Summary.*

Adrenalin Swabbing in Nasal Bleeding.—Lapat (*Journal A. M. A.*, October 4, 1916) states that in his experience spontaneous recurrent epistaxis is often due to ulceration over capillaries or arterioles in the anterior nares. It is not always easy to locate the area of ulceration and Lapat recommends swabbing the whole mucosa with adrenalin solution thus blanching the surface and allowing the oozing area to stand out against the pale surface. Cauterization of this small area then suffices to close the minute wound.

THE FOOD SITUATION OF THE COUNTRY, WITH SOME REMARKS ON THE URGENT NECESSITY FOR A NATIONAL FOOD COMMISSION.

BY

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New York City.

There is grave danger in the fact that the people of America do not adequately realize the all-important role that the food problem is going to play in the war in which this country is now engaged. They may know, more or less vaguely, that war conditions—German submarines in particular—have created a serious shortage in the food supply of the European belligerent and neutral nations, but it is a matter for genuine apprehension that so few recognize that the final outcome of the war may be determined by the amount of food the United States will be able to contribute to the pool of the Allies' resources. Thanks, however, to the American Press, and the splendid service it has never failed to render at crucial moments, the people at large are gradually beginning to see that the most vital and dominating question before the world today is that of the food supply.

But recognition of the importance of a complex problem does not imply that it is understood, or that its manifold details are widely or generally known. The truth of this is particularly manifested by the amount of definite and comprehensive knowledge which inquiry concerning the food resources of the United States will elicit from persons of even more than average intelligence. The vastness of this country, its wide variation of climate, its diversity of agricultural enterprise, and the localization of interests as a result of state lines, have served to

divide the United States into practically forty-eight separate and distinct countries. As a consequence, the information possessed by those who are interested in agricultural matters is essentially limited to their own localities. There are a few, of course, whose knowledge in this direction is national in its scope, but these—with rare exceptions—are the experts connected with the Federal and State governments, whose special studies and labors have given them perforce a comprehensive grasp of the agricultural resources of the entire country.

For nearly three years the American people have been viewing the Great War "from the sidelines." In spite of the attention food matters have received, abroad and in this country, and the widespread discussion of every phase of the question in the newspapers and magazines, the great majority of the people still look on the food problem as a proposition merely of "increasing the food supply." Recently, numerous publications, well meaning but somewhat lacking in their sense of proportion, have instituted a campaign to stimulate the planting of vegetables in back yards, open lots, small parks, private and public lawns, and so on. This is all right as far as it goes, and it seems too bad to have to criticize a movement so praiseworthy in its intent. But the great danger liable to attend this plan of every one planting his "little bit of ground," is the false estimate sure to be formed of the benefits to be derived from such efforts. A large proportion of those who will thus engage in agricultural pursuits on a Lilliputian scale, are totally uninformed and inexperienced. Not only will this make the harvest extremely doubtful, but devoid as these amateur farmers are of practical knowledge, they are bound to make mistakes, neglect to do the things they should do, and look for

results that are impossible of realization. The public, misled by these activities and the attendant enthusiasm, will become over-sanguine in regard to the returns, and be falsely reassured as to the effect on the real situation.

To exert any appreciable influence on the actual volume of America's agricultural products, millions of acres must be planted, in addition to those under cultivation in 1915 and 1916. The increased output of grain, potatoes, beans and all other staples must be in millions of bushels to have any measurable effect in meeting requirements. Let us not fool ourselves with the belief that the extent of our back-yard gardens, or the quantity and kind of products raised therefrom, can be more than the proverbial "drop in the bucket." Again, those who plant back-yard areas, aside from expecting too much from their labors, will be very prone to give more time and effort than the actual returns can possibly justify, and thereby waste energies that might much better be directed to more effective pursuits. A particularly apt illustration of this is shown by the picture at the top of the 6th page of the *Times* Pictorial Section for Sunday, April 29th. This depicts a body of seventy or eighty—possibly more—stalwart men engaged in spading up a plot of ground that could be opened up much more satisfactorily—and, of course, more quickly—by one man with a pair of horses and a plow. No criticism can be offered of the patriotic impulses which prompt such concentration of "man power," but is it not reasonable to suppose that the time and energies of so many men, undoubtedly skilled in other lines of thought and effort, could be utilized to much greater advantage in other directions? It would seem that the use of the time in studying the food

situation, and in employing knowledge thus gained to spread the truth concerning the problems confronting the Nation would be much more productive of tangible results. Finally, there is considerable danger that a great many of the people who cultivate a plot of a few feet square, in anticipating far more returns than are possible at best, will sadly deceive themselves as to the value of their contribution to the situation, or their service to the country. I do not want to be understood as discouraging any effort, however insignificant; under no circumstances would I suggest a discontinuance of any one's project, however small and inconsequential; but let us not delude ourselves in regard to our undertakings, and if we do anything, let us employ our energies with a view to the result, not merely to do something—and save our consciences.

More than anything else needed at the moment in connection with the food question, is a thoro understanding of the fundamental situation; in other words, a comprehensive realization of what the actual problem is, what can be done to solve it, and how this solution can be effected with greatest certainty, efficiency and despatch, and with least difficulty, waste of effort or disturbance of the economic conditions of the country, now or later.

The American people are level-headed, they have a wealth of common sense, and an appeal to reason thru a plain statement of facts and cold blooded logic will surely achieve results in needed directions, when more devious and indirect methods would fail. Undeniably, the United States of America is confronted by the most stupendous and serious problem that the Nation has ever been called upon to solve. It is the paramount issue of the hour, the most momentous question that

any people have ever had to answer, for on this answer, not only the comfort and well being of millions of our own population will depend, but it is certain to have a far-reaching influence on the whole world. This is a rather large statement, but no one who has kept in touch with the food situation thruout the world during the past two years can deny its accuracy. The march of time, and the irresistible trend of circumstances have made the United States the source of a considerable portion of the world's food supply. Fortunate beyond compare in its natural advantages, and blessed with a large measure of success in making the most of them, the wonderful prosperity and accumulation of wealth which have made America the most hated and bitterly maligned of nations, enable it to stand today in the happy position of the one country that thru its accumulated riches, unlimited resources, and spirit of magnanimity and philanthropy, can save the world. I say "the world," for tho America is at war with the central countries of Europe, there is no hatred of the people of these nations, or desire to see them suffer; if peace were declared tomorrow, the people of Germany and Austro-Hungary would have no reason to complain at the treatment they would receive from this country. I also say "unlimited resources," for it is an incontrovertible fact that the United States has sufficient tillable land to raise enough grain and other food stuffs to feed the entire white race, and possibly the whole world!

In order to insure the maximum development of the food resources of the United States, however, the people must be mobilized as never before. It must be mobilization of brain power, of comprehension, of cooperative purpose, and above all, of

sympathetic approval of the acts and regulations of the authorities to whom we trust our affairs.

As previously stated, an enormous amount has been written and published concerning the food question, and while this has served a very important purpose, much of it, unfortunately, has not been of a character to give the people exact information in regard to

First. What America must do to save the world from famine;

Second. What the actual resources are in (a) surplus food supplies, if any; (b) available tillable land; and (c) prospective labor;

Third. How the forces of the nation can best be organized (a) to increase the food production to the highest point for the coming season; (b) to avoid the various factors liable to jeopardize the various crops; (c) to aid and promote successful harvesting; (d) to control the uses and disposition of the crops when harvested; (e) to insure necessary transportation to storage and distribution centers; (f) to regulate food prices, if necessary, without injury to the producer, injustice to the consumer, or disturbance of collateral trade conditions; and finally (g) to avoid all possible decrease or depreciation of natural resources in order to conserve their future productivity.

With the food problem thus explained in detail, the people will realize the desirability of any action the Government may decide to take, and not only give their hearty approval, but, with the true spirit of patriotism and democracy, will ungrudgingly support and cooperate with the required regulations as they become necessary.

With earnest convictions in this direction, and a firm belief that a matter so vitally important warrants as full discussion as pos-

sible from every angle, I deem it not alone a privilege, but a duty to take up *seriatim* some of these various details of the food problem.

First, let us consider what America must do to save the world from famine. Reduced to its simplest terms, this country must contribute, beginning with October, 1917, at least 1,000,000 tons of staple food products a month to the allied and neutral countries of Europe, *over and above its normal exports*; and should peace be declared before this date, this amount will probably have to be greatly increased. To aid in the realization of what this will mean, let us just briefly point out that this increase of food export will require the movement of 30,000 freight cars or 1,000 trains monthly, or over 30 trains of 35 loaded cars daily to get this quantity of food to the seaboard. Carrying this thought a little further, it will require the loading and despatch of over six 5,000-ton ships every day to get this amount of food stuff to the ports of entry on the other side of the Atlantic. Let me emphasize that this is entirely separate from the shipping that must be devoted to the country's regular foreign trade in food stuffs, or other exports such as machinery and building material, fuel, farm implements, war munitions and the supplies that will be imperatively needed if an army contingent is sent to France. These figures are conservative and probably should be substantially increased.

There is no exaggeration, therefore, in the statement that this country is face to face with the most prodigious undertaking the world has ever seen. The human mind can hardly grasp what this means in the aggregate volume of material. Before this huge amount is sent away, moreover, the

needs of the American people must be looked after, and enough food retained to make certain that grim want shall not make its influence felt here. In other words, sufficient food supplies to meet the requirements of the United States must be conserved, with the retention of necessary reserves to meet contingencies and provide a safe surplus to allow for unexpected crop conditions in the following season. A special reserve for seed purposes must also be held back.

The thought that instantly arises is: how can all these things be accomplished with least possible delay, interference with established customs or usual trade conditions, and inconvenience or abridgment of individual rights and privileges?

The answer is plain. *There should be an immediate organization of a National Food Commission to take full charge of the food problem.* Doubtless, it is superfluous to state that this Commission should have plenary power in regard to every detail associated with the control and direction of the country's food supplies. It may also seem presumptuous, in view of the thought and attention being devoted to these matters, to make such a suggestion, much less to lay down any definite scheme of organization. But, here again I plead the gravity of the situation, the tremendous importance of getting it well in hand at the earliest possible moment, and the possible aid any earnest consideration of the presenting problem may give in its ultimate solution, if in no other direction than to help prepare the thinking people of the country for conditions certain to arise.

The Commission should not be large. It should consist of seven men; a chairman, to be known as Director of National Food

Control, who should be the executive head of the Commission with power and authority to act therefor. To facilitate the work of this Commission, which will be enormous, it should be divided into a number of departments. These, at the beginning at least, should be six, as follows:

1. Department of Food Production.
2. Department of Supplies and Labor.
3. Department of Transportation.
4. Department of Distribution.
5. Department of Finance and Economics.
6. Department of Research and Conservation.

Further study and investigation may suggest a different division of the Commission's activities, but for purposes of consideration and discussion, the foregoing will afford a practical working basis. Each department should have a member of the Food Commission as its head. He should be vested with supreme authority in all matters coming within the purview of his allotted responsibilities, with a single exception; his acts and orders should be by and with the advice and consent of the Chairman or National Director. Experience, in my humble opinion, has shown the wisdom of the centralization of authority in a great crisis. Given a strong, capable man of high resolve, constructive vision, and a deep sense of responsibility, and the interests of the people will be much better served by him, acting alone, than by a considerable body of men of divided responsibility and restricted authority. The single official, answerable only to his conscience and the laws of his government, and guided by nothing but his convictions and desire to do his best, will get better results, and much more quickly, than a group of men, each equally able and

conscientious but acting in concert. The single official may make some mistakes, but if he is well trained, intelligent and abundantly supplied with moral courage, he will accomplish his task more satisfactorily, and in less time, than a body of men, however capable, but who are handicapped by the necessity of working as a group; that is, considering everything in committee, harmonizing opinions often widely divergent, and being bound by the decision of the majority, which may not be, after all, the actual viewpoint of any one member. Division of responsibility does not promote efficiency, and this has been repeatedly demonstrated by committee administration. The acts of a group of men invariably lack the clear cut decisiveness, or the definite and positive character of those of the official who is obliged to assume entire responsibility in the disposition of any important question. In other words, a committee's acts constantly indicate an attempt to bring the ideas of several men to common ground, to decide on a course of action that shall "strike an average." Too often, therefore, this course is a compromise reached by mutual concessions of the different members to each other. Thus not infrequently it goes too far for the conservatives, and not far enough for the radicals. Therefore, as before stated, it often represents no one's real opinion or belief.

Recognition of these facts can hardly fail to lead one to the earnest belief that in any great crisis like this concerning food control, individual responsibility insures maximum safety, efficiency and expedition.

The activities of the different departments of a national organization for food supervision and direction, as seems so urgently called for by the exigencies of the

hour, will develop as the plan unfolds, and new and unexpected occasions arise.

With these observations in mind, let us briefly consider some of the lines of action that can be foreseen and provided for.

1. *The Department of Food Production.* This should have charge of everything directly concerned in the investigation of present supplies, the kind and quantity of crops raised in the past two years, the available acreage, stimulation of planting, the control and allotment of public lands, the spread of information on all topics relating to crops, the preservation of careful records, and the constant surveillance and direction of food production generally.

These various phases of activity may be given over to special bureaus, each headed by a competent expert, definitely responsible for the matters placed under his supervision, and answerable to his department chief. Each bureau should be a separate organization, entirely distinct from the others in direction, control and personnel, but arranged and prepared to cause minimum delay or "lost motion," if I may use the term, in their active cooperation with each other, or in the performance of their respective duties.

2. *Department of Supplies and Labor.* This department should have charge of the problems of seeds, fertilizers and equipment; the distribution of these where needed to responsible companies, associations and individuals; the arranging for immediate or deferred payments for same; the mobilization of labor for agricultural work; and general direction of all agencies concerned in the cultivation and harvesting of crops.

3. *Department of Transportation.* This department should have entire charge of the movement of food supplies, (a) to concentration points; (b) from these to centers for domestic distribution; (c) to seaboard cities for foreign shipment; the rolling stock required for the proper distribution and handling of food products; the grain elevators or warehouses in which supplies must be stored pending shipment; the labor connected with transportation and storage; the provision and control of docking and loading facilities; the control and management of the ocean or coastwise shipping

needed for a steady flow of food supplies to the nation's allies; and general supervision of all matters directly associated with the transportation of the country's food products from the source of supply to the point of final distribution. Thru appropriate bureaus, this department, in addition to its other transportation problems, will have to provide and maintain a large fleet of ships. Doubtlessly, a considerable number can be obtained thru charter, the confiscated German and Austrian ships will be available, and the special wooden and steel vessels now being built by the Government should be placed under the direction of this department of the National Food Commission. Furthermore, the powers of the Commission should be enlarged to include the building of such additional ships of moderate tonnage as may become necessary or desirable. The work of this Department of Transportation unquestionably will be among the most important of the Commission's activities, for the utility and adequacy of those of all the others will depend to a large degree on the way in which the food supplies are made available to the ultimate consumer.

4. *Department of Distribution.* The activities of this department, at first thought, might be looked upon as falling within the scope or field of the Department of Transportation, but as conceived in the scheme of organization under discussion, its duties will be quite distinct, for they will have to do in particular with the manifold details pertaining to the elaborate mechanism of vending and accounting between the producers, distributors and consumers. So complex will be the questions involved that only the most general description of the duties of this department will be possible at this time. Suffice it to say that all complicated problems concerned with the establishing and satisfying of proprietary interests, the transferring of rights and ownership in food supplies, the investigating and approving of credits and liabilities related to these supplies with countries, companies, associations and individuals, and the adjusting of all claims, will come within the administrative authority of this department. Its decision will be final, with, of course, the exception of appeal to the laws of the land. Special provision will have to be made to handle and protect individual interests in

the delivery of food supplies to European governments. The Commission should stand in the position of middleman in such transactions, and save the producers from the annoyances and red tape which all too often work a genuine hardship on those who deal with governments.

5. *Department of Finance.* The functions of this department will be identical with those of similar departments in all large commercial enterprises; the handling and disbursement of all funds placed at the disposal of the Commission for conducting its affairs; the actual payment of all claims on presentation of orders from the Department of Distribution; the collection of all accounts due from transactions between the Department of Distribution and the nations, parties and persons with whom the Commission has commercial dealings, as agent or principal; and the entire supervision and discharge of the fiscal affairs of the Commission.

6. *Department of Conservation and Research.* This department will have a most important division of the Commission's work altho it may not be as prominent as some of the others. For example, the question of waste will require especial attention. It is a well established fact that the waste of food each year is enormous. The amazing prosperity thruout the country during the past few years has made the people careless, and in the kitchens of our homes, our large hotels, and public institutions especially, the waste, according to very conservative estimates has been said to exceed ten per cent. Indeed, there are those who, as a result of careful thought and investigation, do not hesitate to claim that twenty per cent. is nearer correct. Obviously, there is no way of ascertaining the exact loss each year from the food waste incidental to carelessness, ignorance and neglect, but the most casual observation justifies but one conclusion, and that is that it must be very great. At any rate, no one will deny that this problem should be studied, and the people taught rational economy in the preparation and use of food stuffs. The housewives especially can be marshalled in this particular movement, and a little teaching along practical lines will enable them to become factors of far-reaching influence in cutting down needless waste in the home.

In addition to the foregoing there is the

waste due to thoughtless extravagance in supplying our tables, a common fault of which the majority of the American people are guilty. Thus at every meal in the home or public eating place, the average individual invariably insists on having a great deal more than he needs—often more than he can possibly eat. The remainder is usually thrown away. Not the least of the duties of this department will be the systematic dissemination of information in regard to the amounts and kinds of food required to maintain perfect health. Most people will gladly readjust their habits and customs when shown to be in error; thoughtlessness is almost always the cause of dietetic errors, and education is the most certain means of effecting reform.

Again, the people must be shown the advantages of new, or substitute foods. Our country, fortunately, has such a diversity of climate, and such wide geographical distribution, that there is hardly any known food product that cannot be grown in amounts to meet all needs. Just as an illustration, reference may be made to the avocado or alligator pear as a source of fat. Offering over twenty per cent. of edible fat, this fruit can be grown in quantities to obviate any shortage in this essential direction. In addition, we can have a practically inexhaustible supply of edible oils and fats from our peanuts, cotton seed and cocoanuts. Already a substitute butter made from cocoanut oil is on the market that seems to settle all fears of any lack of the dairy made product. The way clarified cotton seed oil has been gradually but surely superseding lard for all cooking purposes during the past decade speaks eloquently of the possibilities in this direction. There are many other developments in regard to the evolution of new and valuable food stuffs—only a few days ago the manufacture of a very satisfactory butter from alfalfa was announced—and this department, with its command of the nation's scientific resources, and its own corps of experts, will be able to amplify and expend the available food supply to a gratifying degree, not only by developing new foods, but by devising new methods of using the old ones, and extending popular knowledge in respect to food values.

Another line of investigation that seems to be especially needed is in regard to the undue refinement of various foods, notably

the milling of certain cereals, wheat in particular, whereby the coarser portions of the wheat kernel are removed, leaving only the soft, inner part. This makes the very delicious white bread that has become the most staple article of the modern dietary. It has been claimed by some, however, that this white bread, appealing and appetizing as it is, is in reality much less healthful and nourishing than that containing a certain percentage or made entirely of whole wheat flour.¹ It has also been stated that the use of white flour exclusively entails serious waste. Practically all of the European nations at war have discarded the baking of white bread, and made it compulsory to use only that made from coarser wheat flour, or special combinations of cereals, potatoes, etc. This question of the relative food value and healthfulness of white bread and that made from whole wheat, rye, etc., calls for thoro investigation, as, in fact, does the subject of bread making generally.² If Funk's recent researches, which seem to show that the vitamins or vital substances of the wheat kernel are found

only in the husk or pericarp, are substantiated, there can be no doubt as to the desirability of using more of the wheat berry for bread. In regard to the argument as to waste, however, it should be remembered that the portion remaining after the process of "bolting," is not wasted at all, but in the form of wheat bran is utilized completely for feeding cattle, etc.

Another statement that should be carefully investigated is that put forth by advocates of prohibition, that the manufacturing of beer entails the extensive waste of food materials and should therefore be stopped during the war period. I hold no brief for beer, its makers or users, but I do prize the truth, and if the opponents of beer drinking have no better argument than the above, I fear they will get little support or sympathy from thinking people. As a matter of fact, the only cereal used in beer making is barley, and this not only constitutes the main use of this cereal, but as a result of this use, over a third of the barley employed is made available for the special feeding of milch cows. According to facts ascertained by the U. S. Government, the total of cereal consumption involved in the use of beer is a fraction of one per cent. of the grain production of this country! To be sure, a certain amount of sugar may be used in the manufacture of beer, but as this, together with the barley used, enters definitely into its composition, it must be clearly evident that it has a food value to this extent; therefore, tho it may be consumed as a beverage, whatever food elements it carries will be assimilated by the organism, and not "wasted" as claimed.¹ I firmly believe in temperance. Never was it more essential than now, when clear thinking is so necessary for the welfare of the nation, but let us be fair and honest in our attitude toward every problem

¹ "The increase in the price of labor as well as the demand for flour or meal brought about the invention of a device for the more economic milling of these cereals, the roller mill system which came into use in 1878. This process made it possible to separate the several parts of the grain; the germ, the bran and the endosperm or starchy part. This allowed the latter to be ground to a fine flour which because of its whiteness appealed to the housewife as a purer product. The germ and bran were largely discarded as human food, and sold as fodder for cattle, horses and hogs. This new flour has undoubtedly kept better than that made by the old process; the new method employed in its preparation, however, deprives it of valuable constituents. Thus it contains less protein, fat and ash, but what is even more important, it is markedly deficient in certain so-called accessory food substances,—the so-called vitamins which are contained in the intact kernel, the outer layers (aleurone layer) and probably in the germ. In other words, wheat flour, corn flour, hominy and grits, minus the bran and germ, are lacking in vitamins, while whole wheat flour and corn meal contain practically all the vitamins of the whole grain."—AMERICAN MEDICINE, November, 1916.

² Hoover, whose statements are bound to command our deepest respect is quoted as saying that in Belgium the effort to use more than 81 per cent. of the wheat grain in making bread was followed immediately by an increase of a thousand deaths. "After that," he said, "we did not dare to mill more than 81 per cent. of the grain."

¹ Statement by Kennedy Jones, Director of Food Economy in England, May 17, 1917: "If it be found advisable to stop beer altogether—upon which point there is a considerable difference of opinion—it would be simple common sense to allow the workers time to adapt themselves to the change gradually, by a gradual reduction of the supply rather than by checking or stopping the brewing of beer at once. Also it is well to bear in mind that if the worker is not deriving part of his energy, as has been his habit, from beer, he may require more bread, so that practically no actual saving of bread could be effected."

and remember that there are many good people who have the right to take a certain proportion of their barley and sugar in solution if they wish to. As for whiskey and spirituous liquors, there is no doubt in my mind as to the desirability of prohibiting their sale and use, at least during the war. Even this, however, should be carefully investigated before final action is taken.

There are many other questions that should engage the attention of this Department of Research and Conservation. Thus, for example, there are an infinite number of problems connected with food production, such as selective planting, the selection of seeds, soil enrichment, the use of plant bacteria, soil antisepsis, crop protection, and so on.

The problems of agricultural waste will also come within the field of this department. Aside from that incidental to faulty planting—improper adaptation of the crop to the soil—there is an enormous waste every year thru careless or ignorant harvesting, improper packing, delayed transportation and unwise marketing of fruits and vegetables. Vast quantities of these valuable food products are allowed to spoil and rot for one reason or another. It is no uncommon sight in the Fall to see the ground in many an orchard covered with apples or other fruits that the owner cannot—or will not—get to the market. This Department of Research and Conservation should have a bureau whose sole duty should be the education of the farmer in regard to proper harvesting, packing, etc., keep him supplied with market information; and give him assistance in getting his produce promptly and profitably to the consumer.

A system of dehydration of rapidly perishable vegetables and fruits should be worked out, as a very great saving has been effected in this way in countries where such methods are in use. At small cost producers can have their own dehydrating plants, and thereby reduce waste and loss to a minimum. Larger and more elaborate plans can be established in each community by the local town or city government, or by groups of farmers themselves on a co-operative basis. The process of dehydration removes the water, but leaves every nourishing element, and the fruits or vegetables when thus dried keep indefinitely. The reduction in bulk and weight is highly

advantageous, as it reduces the storage space required, facilitates handling, and cuts down transportation costs. The method will go far to solve a good many of the problems pertaining to food preservation and the elimination of needless waste, thereby securing directly a substantial increase in the annual food supply.

Many other questions having an important bearing on the conservation of our food supplies will come under the consideration of this department, as its duties unfold. I have only "scratched the surface" of its wonderful opportunities, not only to aid and extend the specific purpose of the Commission, but to serve and promote the interests of all humanity.

Such, briefly, is the plan of organization which plainly indicates the important and far-reaching influence a National Food Commission, with adequate power, will have, not alone in markedly increasing the food production of the country, but in developing our natural resources and placing their direction on a sound and systematic basis.

I have dwelt very briefly on the matter of price regulation, as it is impossible to do more in a general consideration of food production. It cannot fail to appear that any action in this direction must be based fundamentally on a due regard for the farmers' rights. The times and conditions are exceptional, the country is remarkably prosperous, and the producer certainly has a right to participate in the prosperity of the nation. In any effort to regulate prices, *there must be no disturbing or setting aside, more than is absolutely necessary, of the natural economic conditions created by the increase and urgency of the current demand, and the ability of the people to pay.* At the same time, abnormal influences such as any cornering of supplies, extraordinary increase of transportation rates, combinations or conspiracies "in restraint of trade"

to raise and maintain prices of common commodities, and so on, should be dealt with summarily under existing laws, and the interests of the people safeguarded without delay. The study I have given to the proposal to fix prices has convinced me that this should be in the direction of establishing minimum rather than maximum rates. Lack of space precludes my giving all the reasons for this conclusion, but I feel that it has been shown abroad that a minimum price can be fixed with greater fairness, more definite facts for guidance, and readier acceptance and approval on the part of those affected.

In regard to rationing the people I shall also say very little, for I do not believe this will be required in this country, unless some unexpected condition develops. The prevention of any such outcome is to be aimed at, and I can conceive of no prophylactic measure that promises more certain protection against "bread tickets," "meatless days," and the rationing of the American people, than the early organization of a National Food Commission, with "power to act."

It is hardly necessary to point out that the organization of a National Food Commission is an emergency procedure entirely, designed to meet abnormal conditions created by the European war and the forced participation of this country in it. It should not supersede, nor interfere with the activities of the present departments of the Government; on the contrary, its efforts should aim at as perfect cooperation and collaboration with these as may be possible, in order that it may achieve the specific purpose for which it is to be organized, with the highest degree of efficiency and success. By utilizing the wealth of information of the Departments of Agriculture and of

Commerce and Labor, a very great saving of time and effort may be accomplished. Obviously, great tact and intelligence will be needed in carrying out the purpose, and in performing the special duties of a National Food Commission. But with the exercise of care and good sense, it is reasonable to anticipate unlimited benefits, with the avoidance of friction or serious complications.

The scheme as outlined is necessarily imperfect and lacking in many respects. But I have earnestly tried (*first*) to point out the urgent need of such a commission to meet the present crisis, and (*second*) to show that even tho the stringent control and direction of our national food resources may have certain slight disadvantages, these will be more than offset by the development of new opportunities and the establishment of the whole matter on a well systematized and stable footing; in other words, while the interests of a few individuals may suffer to the extent that they will be prevented from taking advantage of the present day situation to make enormous profits, the people at large—including producers, consumers, and the public—will receive great and lasting benefit—and no further argument would seem to be needed.

The great object that has prompted this consideration of the subject is not, therefore, to demonstrate the gain to the people, except in so far as this is incidental, but to drive home as clearly and forcefully as possible that the predominating need of the hour is the mobilization of our national food resources under governmental organization and control.

It is neither my desire nor my intention to pose as an alarmist. A country that has done so much to carry into the "far places of the world" the message of democracy,

that has been the haven of so many seeking personal freedom and opportunity, and that has proven so conclusively the blessed possibilities of a republican system of government, surely ought to be safe against the encroachment of autocracy and tyranny. But conditions have arisen, forces of cupidity, malice and hate have appeared, and a spirit of barbarism and ruthless cruelty has been exposed to a degree that civilized people never dreamed of as existent in the world today. These baneful forces are not only now focussed on America, but there is an abundance of evidence to prove that they have long been seeking an opportunity to do it all the harm they could.

Never, therefore, was our country, and all that makes it dear, so terribly menaced as it is today. Failure on the part of the nation to use its utmost strength—not to crush the German people nor to add to their suffering and distress more than the exigencies of war entail, but to defend our institutions, our homes, and our altars—means, sooner or later, the “rape” of our country. We have witnessed the criminal assault of Belgium, Serbia, Poland, Roumania and France. Our hearts have bled and our tears have flowed, as we have tried, as far as conditions have permitted, to assuage the suffering and lighten the burden of those who have been the innocent victims of an insane lust for power and conquest. It is for us to say whether we will blindly procrastinate until it is too late to avert catastrophe, or will rise to the situation and place our national existence and welfare on a secure foundation, by giving to the forces of civilization the aid and reinforcement our present fortunate position makes possible.

If our Government, alive to its responsibilities, and in the fullness of its wisdom,

places our food supplies and resources under the administrative control of a National Food Commission, as seems certain, it is to be hoped that every true American citizen will contribute his share to the successful evolution of the plan by familiarizing himself with its purpose and seizing every opportunity of upholding a movement that will mean so much to all humanity.

THE RE-TRAINING OF DISABLED MEN.

BY

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It will be well to preface a discussion of the matter referred to in the title of this paper by a consideration of the conditions under which soldiers and sailors go to war and of the circumstances under which they return to civilian life. War is a social risk; when war affects a democratic nation it involves every citizen equally. Armed forces, armies and navies, are the means by which nations make war. Because the soldiers and sailors, composing armies and navies, are citizens delegated to perform a public duty, their nation has an obligation to compensate them for all personal detriment incurred by their service so that they suffer no more thru the risk of war than every citizen of a belligerent nation must do.

The first duty of a nation is to make good to its soldiers and sailors the disablement incurred by them thru military or naval service. To bring the physical unfitness of disabled men to an irreducible minimum is a national obligation; in caring

for disabled soldiers and sailors no source of possible benefit to their condition should be left unexhausted. In addition to the most careful medical and surgical treatment, artificial limbs, and other appliances, should be provided and maintained in repair for those requiring them. Also, if disabilities make it inadvisable for a man to follow his former employment he should be fitted for a new occupation by appropriate vocational training. In Canada, the Army Medical Service gives treatment to returning soldiers and sailors; and an especially established body, the Military Hospitals Commission, assists the Medical Service in its work and provides artificial limbs and vocational training. The great responsibilities of bodies such as these necessitate efficient organization and the employment of competent medical skill.

Usually men are not discharged until their treatment and training has been completed. Until they are discharged the subsistence of themselves and family is provided for by military "Pay and Allowances." At their discharge, pensions are awarded to men disabled during their service.

In Canada, the pension varies in amount in accordance with the degree of the disability for which it is intended to compensate; the aim of the pension is to ensure decent comfort to the homes of the men who, because of disabilities incurred through military or naval service, are less capable than normal men of earning a full livelihood for themselves and for their dependents. In Canada, a Board of Pension Commissioners has complete and exclusive jurisdiction over the granting and refusing of Canadian war pensions.

Usually, men are discharged when dis-

abilities occasioning physical unfitness for further military or naval service have been brought to an irreducible minimum; a permanent pension can then be granted. Sometimes, when treatment must be prolonged, it becomes desirable to discharge men before their disabilities have been brought to a minimum; temporary pensions which vary in accordance with any subsequent alteration in the extent of the disabilities for which they compensate, are granted in such instances.

The medical officers—physicians and surgeons—who decide when a disabled man is to be discharged and permitted to pass under his own control, must consider his physical and mental condition, his need for treatment, his character, his opportunities, his vocation, etc.; the decision must be made in accordance with the circumstances of each case. For example, a disabled man of good character, with a home and a position open to him, may be discharged, with a temporary pension, when he still requires a few minutes of simple treatment daily; it is certain, in such a case, that the treatment will be followed and that it will benefit the man to permit him to pass under his own control. On the other hand, an erratic, dissipated man, requiring similar treatment, who has neither home nor prospects of employment, will not be discharged. If he pass under his own control treatment would probably not be received and his disabilities would increase with disadvantage both to himself and to his country.

A nation has an obligation to make good, by treatment or compensation, disablements incurred thru service by ex-soldiers and ex-sailors. But, it has no obligation to make good disabilities, not resulting from naval or military service, incurred by soldiers and

sailors thru their individual act or negligences. In unreasonably refusing to accept simple treatment by which a disability may be reduced, a soldier or sailor is at fault. Consequently, when a disabled man, whose disabilities are partly or wholly due to his own fault, is discharged, he should not receive a pension to compensate for that portion of his disability which is due to his own fault. Reduction of disabilities to an irreducible minimum and the provision of an appropriate pension as compensation are not, alone, sufficient to secure the proper replacement of returning men to civilian life. They must, when necessary, be made employable, and they must, by appropriate means, be helped to secure appropriate employment.

There are few disabled men, if they have received appropriate vocational training, who cannot hold employment, on their own merits, in well chosen commercial or industrial activities. Employment bureaus, with widely spread branches must assist men discharged from service or released at demobilization, in gaining independent positions. Pension, in connection with the employment of disabled men, is the provision of some means by which disabled men, and their employers, may be relieved from any increase in the cost of accident and life insurance dependent upon the existence of their disabilities. The provision of land and of advances of capital, are, among other things, important matters which must be considered in planning measures for securing the re-establishment of returning soldiers and sailors in civilian life.

Since the re-establishment of discharged soldiers and sailors in civilian life is a temporary operation, permanent machinery is not to be created for that purpose, unless

a permanent use for that machinery exists. Therefore, whenever it is possible to do so, existing institutions and public services should be used. At the same time, it will be found that in most instances any special machinery devised for dealing with the problems of disabled men can usefully be employed in meeting the problems of demobilization and employment after the war.

Armed forces exist to fight, therefore, armies and navies should be released promptly from the necessity of caring for men who become disabled and physically unfit for fighting. Delay in replacing disabled soldiers in independent positions in civilian life is not permissible. If existing procedure involves delay, that procedure should be modified and, if necessary, new machinery prompt in its action should be created.

"The problem of the disabled soldier" is a difficult one; it can be met best by a single administrative authority controlling the requisite executive agencies—each of them closely connected with the field of its activity. In Canada, the bodies entrusted with the realization of Canada's responsibilities towards her disabled men act as the trustees of soldiers and sailors. It is the duty of these bodies to watch over the interests of returning men. It is intended that application should be made to these bodies for information, or assistance, in all matters affecting disabled soldiers and sailors, not only during their service but after their discharge from the army or navy. Altho private benevolence is often offered to the bodies entrusted with the realization of Canada's indebtedness to her soldiers and sailors, benevolence is permitted to occupy no essential place in the execution of the functions of these bodies.

In Canada, awakened public opinion bids fair to make it necessary to relieve disabled soldiers and sailors when they are affected by hardships incidental to our existing social system, altho such hardships are not consequent upon military or naval service. If it should be so, a desirable first step will have been taken towards remedying defects in our national organization which stress of war has made prominent. Experience, in all of the warring nations, insists upon the desirability of a sound understanding, among all classes, of the precise situation in which disabled men return to their homes. All should understand that while the nation has an obligation to rehabilitate, generously, those of her citizens who have suffered by their service, there is also an obligation upon returning soldiers and sailors, within the limit of their capacity, to continue to be good citizens.

Functional re-education is the term under which are grouped all of the means, other than active medical or surgical treatment and the provision of artificial appliances, adopted to secure the restoration of a maximum of its normal function to an injured part. Institutions carrying out functional re-education employ treatment by active and passive mechano-therapy, by galvanic, static, faradic and high tension electric currents, by vibration, by bathing and blasts of hot air, by baths of many kinds, by colored lights, by massage, gymnastics, and exercises of various sorts. Altho such a variety of methods exist, opinion is universal in insisting that work, properly selected and graduated, has the highest therapeutic and psychic value and constitutes the best possible means of re-acustoming muscles, and the mind, to action. Whenever possible the work given—occupational

therapy—constitutes an introduction to the vocational training, properly speaking, which will be given later should it be necessary to do so.

Passive mechano-therapy is little used. Experience has completely demonstrated the greater value of active movement, initiated by the patient himself. The exercises first given are simple ones, requiring little effort, such as those commonly employed in the re-education of tabetics. The exercises for the leg comprise walking along lines, straight or irregular, stepping over obstacles of various heights and shapes, mounting or descending stairways with irregular tread; for the arms there are objects such as balls, skittles, of differing sizes, form and color, and devices which require the hand to be put in various positions. All of these exercises are performed either voluntarily or at the word of command. In addition to these, gymnastic exercises of all sorts are usefully employed.

Vocational training is the term applied to the instruction given to a disabled man in order to make him employable. It is estimated that about one-half of one per cent. of wounded men in France will require vocational re-education. The importance of securing continuance of ability to be self-supporting to disabled men is very generally recognized; each of the warring Nations has established institutions, astonishingly similar in their organization, for the purpose of providing appropriate vocational training for its disabled men.

Appropriate medical and surgical treatment, functional re-education and vocational training, with the provision of artificial appliances, are complementary processes. They should all be carried out as early as possible in the progress of a disabled man.

Under efficient organizations, they will often be performed simultaneously. They can best be carried out, either in a single institution or, in separate, special institutions, closely allied in space and organization. While every military hospital should have a staff and equipment permitting it to give all treatment and training appropriate and desirable for its inmates, experience has demonstrated, beyond the possibility of a doubt, that it is desirable for functional re-education and vocational training to be given in special institutions. In France such an institution is called a Centre of Re-education. Experience has shown that a Centre of Re-education should be large rather than small; an appropriate number of inmates is not less than two hundred. The prime purpose of a Centre of Re-education is to provide functional and vocational training it must also have provision for giving necessary medical and surgical treatment. That treatment is, usually, of a special nature and often requires the services of men specially trained in orthopedics.

SURGICAL NOTES ON WOUNDS OF WAR.

BY

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Military surgery differs from the traumatic surgery of civil life mostly in the severity of the injuries and in the nature and extent of the infections. In the present European war, the character of the fighting on the western front has made this most

conspicuous. In the writer's experience in this region, the majority of the wounds were those caused by high explosive shells, shrapnel, bombs and hand grenades; while those injuries caused by rifle or machine-gun fire were much less numerous. The wounds produced by the bursting of high explosives, or shrapnel shells, because of the rough and irregular form of the missiles, produced severe lacerations, with great destruction of tissue. Many of these wounds were slight and multiple, due to small pieces of shell; but about twenty per cent. were of the more severe type. Injuries produced by the modern small-caliber high-velocity ball used in rifle and machine guns frequently pass thru the tissues, producing very little traumatism; but when these bullets or balls strike a bone the injury, as a rule, is very severe, the bone being shattered; and the fragments, partaking of the velocity of the missile, are driven deeply into the tissues in all directions. In these cases, or when the rotation of the ball occurs, due to irregular impact, the point of exit is often as large as a man's fist, or even a child's head. These gunshot wounds usually present a characteristic appearance. The tissue, appearing dry and lifeless, and of a brown, muddy color, may be cut away without causing pain or hemorrhage. Usually, there results great hernia protrusions of muscle, which leave large gaping wounds open to infection.

Life in the trenches is, at its best, most insanitary and the clothes of the soldier, when wounded, are frequently filthy with mud and dirt which abounds in bacterial life, the trenches being dug in soil which has been highly cultivated and fertilized with the excrements of man and animal for years.

After being wounded, first-aid treatment is frequently given by a comrade in like filthy condition, and it may be hours, and even days, before proper treatment of the wound is possible. These conditions, combined with exposure to wet and cold, and the nervous strain of trench warfare, are the factors contributing mostly to the severe infections which are encountered by the surgeon at the base hospitals.

Great advancement has been made in the efficiency of the army medical service. The improvements in the organization of this service have shown a definite move in favor of procuring earlier surgical intervention; but, at best, the vicissitudes accompanying military operations frequently make this early treatment a matter of great difficulty, tho early treatment is a most essential factor in the prevention of those severe infections endangering both life and limb. This is of capital importance in the treatment of gunshot wounds of the abdomen, and in the prevention of gas infections.

The treatment of gunshot wounds divides itself naturally into two phases, the prophylactic sterilization of the wounds at the front, and the therapeutic sterilization at the base hospitals, after infection has become established.

The prophylactic sterilization may be divided into mechanical and chemical sterilization. The "mechanical sterilization" consists of cutting away all devitalized tissue, removing all accessible foreign bodies, and the establishment of adequate drainage. The question of drainage is the most important procedure in the treatment of all wounds of war. No wound should ever be sutured or primary suture ever attempted unless the wound may be completely excised, as all wounds are infected

from the beginning and chemical sterilization of these wounds has never proved sufficiently adequate to make primary suture a safe procedure. In fact, the most disastrous results have attended such practice.

It is the duty of those at the front to prepare the patient for transportation to the base hospitals in the rear, and this is usually done at the Casualty Clearing Station, which lies a few miles back of the firing line. The wounded are brought to this station by motor ambulances. At the Casualty Clearing Station enough time can usually be taken to make careful examinations and to do such operations as may be imperative for the salvation of life and limb. Here wounds are explored and whenever possible they are examined by the X-ray to determine the presence of foreign bodies and the condition of fractures. It is wise, also, to examine the clothing to ascertain if any pieces have been carried in by projectiles.

Compound fractures seem to demand more attention than wounds of any other character because of their great number and the necessity of complete immobilization for transportation. Such wounds, after mechanical sterilization, are probably best treated with plaster. It is essential that immobilization be perfect, because of pain due to the rubbing or movement of the ends of bones and the danger of their producing grave traumatism to important structures in their neighborhood. When the immobilization of compound fractures is impossible by the use of plaster and splints, mechanical fixation of the ends of bones by wiring is advisable. It is necessary that not only fractures be immobilized, but also injuries to soft parts, without bone involvement, as

the movement of lacerated tissue greatly predisposes to the dissemination of infection.

In gunshot wounds of the scalp, when there is any evidence of fracture or involvement of the skull, the track of the missile should be excised and the bone explored; and in the presence of bone involvement, trephining is always indicated, as the external appearance of the fractured skull is no indication as to the conditions within the cranial cavity.

All head injuries should be most carefully watched, and the first indication of intra-cranial pressure should be a definite indication for opening the skull.

Gunshot wounds of the abdomen demand immediate attention; where there is any evidence or reason to suspect visceral involvement, and the condition of the patient and the facilities for operation are satisfactory, abdominal operation should never be neglected. It is frequently necessary to stimulate these abdominal cases and to treat the shock which is frequently associated, before attempting surgical intervention. It is a question for the judgment of the experienced operator to determine the proper time for operation. The difficulties of differentiating by symptoms between the presence of hemorrhage, shock and sepsis, make the question most difficult; but when there are indications of hemorrhage, it is folly to postpone operation. The pulse is the most satisfactory guide as to the condition of the patient. When the pulse is more than 120, conditions may be looked upon as serious; but a pulse at 140 is not necessarily a contraindication for surgical intervention. In operating upon these abdominal cases, it is wise to give a preliminary dose of morphine and continuous

saline hypodermoclysis during operation. Also, it is important that the table and room should be kept warm. It is not so much the exposure of the intestines that is productive of shock as it is their rough handling.

Intestinal contents free in the abdomen should be gently sponged out with warm saline sponges, but should never be washed out. Resection of the intestine should be avoided whenever possible, preference being given to purse-string closure. Multiple resection is a most dangerous procedure. The higher the injury in the small intestine, the greater the danger, while perforating injuries of the stomach and the colon appear to be less dangerous. From a standpoint of prognosis, all injuries to the abdomen become increasingly worse the longer the operation is delayed.

Upon the arrival of the wounded at the base hospital, all dressings should be removed and wounds carefully inspected. These dressings, when removed, often prove to be poultices of pus, from one to several days having elapsed in the process of transportation, during which time it has been impossible to give these wounds proper attention, and during which time the infection which was not destroyed by the chemical antiseptics used at the front has developed fully. The treatment of these infections constitutes the greater part of the work at the base hospitals.

Opinion has been divided as to the best means of treating these infections, and practically all of those antiseptics which, in civil practice, had proved adequate for the needs of aseptic surgery, were found wanting, and to a greater or less extent discarded.

The treatments producing the most satis-

factory results today seem to be the physiological or saline treatment of Wright and the antiseptic treatment by the Carrel-Dakin method.

The object to be attained in the treatment of infected wounds is the sterilization of the wound cavity and the surrounding tissues, that suture or closure of the wound by other means may be made a permanent and safe procedure; and that compound fractures be converted into simple fractures. Wright attempts, by the use of hypertonic saline solution (5% sodium chloride) to accomplish the cleansing of the wound and the disinfection of the tissues by continuous irrigation of all parts of the wound with a hypertonic solution. This solution, by osmotic or other action, increases the flow of lymph from the surface of the wound, producing a natural lavage of the tissues, and so maintains an outward flow of lymph, thus inhibiting the entrance of bacteria, and at the same time replacing with fresh lymph that which has expended its bactericidal energies. This constant irrigation of the wound not only inhibits the development of bacterial life within its cavity, but greatly facilitates drainage. The use of this treatment is attended by the rapid throwing off of necrosed tissue and the establishment of abundant healthy granulations. After the entire wound is granulating freely, the character of the solution should be changed from the hypertonic to the isotonic, or normal saline solution, as the continuation of the stronger solution after this stage of granulation tends to inhibit the migration of leucocytes, which is encouraged by the isotonic solution.

After a few hours' treatment with the weaker solution, this granulating tissue is

covered with a thin white film, which is composed of phagocytes, and they, in turn, prevent the reinfection of the tissues.

Colonel Gray has had considerable success in the treatment of infected wounds by using salt packs, in which sodium chloride in tablet form is placed all thru the packing of the wound. The outflow of lymph gradually dissolving these tablets, accomplishes much that may be expected from Wright's technic. This form of treatment is desirable for use during transportation, or when time will not permit the use of the more complicated procedure of continuous irrigation.

The Carrel-Dakin treatment, which has come into such prominence, consists of the use of special technic worked out by Carrel, whereby the wound is kept constantly wet with a 0.5% solution of sodium hypochlorite, which is known as Dakin's solution. It is probably due to the technic, rather than to the antiseptic, that such brilliant results have been obtained.

The Carrel technic consists of opening these wounds under the most aseptic conditions, sufficiently wide to give free access to all parts of the cavity, extreme care being given to the searching out and opening up of all pockets and recesses of the wound. The X-ray is used to locate foreign bodies and all pieces of shell, detached fragments of bone, or pieces of clothing, which may be in the wound, are carefully searched for and removed. All devitalized tissue having been thoroly cut away, hemorrhage is controlled by ligating or twisting any bleeding vessels. The wound is then irrigated with the hypochlorite solution, and rubber tubes, six millimeters in diameter, covered with bath toweling, are carried into all the recesses of the wound. Around these

tubes gauze is lightly packed; this must be so arranged that the solution which is carried in by the tubes will saturate the gauze and thus come in contact with every part of the wound cavity. The wound is then covered with non-absorbent cotton and thru which the irrigating tubes pass. The tubes are connected above to an irrigator containing the solution, which is run into the tubes in sufficient quantity to completely saturate the wound about every two hours.

This treatment insures a constant supply of fresh antiseptic, which is non-toxic and non-irritating, to every part of the wound cavity. This hypochlorite solution possesses also the hypertonic properties of Wright's solution, which assists in the cleansing of the surrounding tissues.

The after-treatment consists of the daily changing of these gauze packings under the most aseptic precautions, and the making of daily bacterial counts. These counts are an important procedure in the Carrel technic, and it is by this means that the proper time is determined for the closure of the wound by suture.

The bacterial count is made by preparing a smear after the usual method, and examining the same with a one-half oil immersion lens; the number of bacteria is counted and recorded in each microscopic field; and after the bacterial count has been reduced to one bacterium to four or five fields for several consecutive days, the wound may be safely and permanently sutured.

Fresh wounds in which infection has not become established may frequently be rendered sterile and ready for suture in from four to eight days; and wounds, such as compound fractures in which infection is established may be sterilized in from fourteen to twenty-eight days.

Treatment of Compound Fractures.—

In the treatment of compound fractures, it is essential to procure as early as possible complete immobilization and just how to procure this, taxes, in many cases, the ingenuity of the surgeon to the utmost. Many instruments in the forms of special splints, slings, and mechanical devices, have been invented; but there yet remains a great number of cases in which immobilization seems impossible without local mechanical fixation in the form of bone plate or wire suture. This brings up the much debated question as to the advisability of introducing a foreign body into a septic wound. It has been the experience of many to find that it is of only temporary value, and that in infected cases the continuance of supuration demands their removal. While this is a valuable procedure in that it greatly reduces pain caused by the movement of the ends of fragments during transportation to the base hospital, it is wise, however, to remove such foreign bodies as early as possible and start the treatment for the disinfection of the wound. After sterilization is complete, foreign bodies and bone grafts may be used in these compound fractures with results no less successful than in their use in the treatment of simple fractures.

The Recrudescence of Local Sepsis.—

Following some slight traumatism or surgical intervention, it is a common experience to have an outbreak of local sepsis in completely healed wounds. This phenomenon is due apparently to the healing of the wound without complete disinfection of the tissues, in which bacteria may lie dormant for a period of months, only to become active upon the diminution of the local resistance of the tissues, due to traumatism.

In wounds which have gone thru a period of suppuration and have healed by second intention, this remains a factor which must always be considered before surgical intervention should be attempted for the removal of foreign bodies, the correction of deformities, the use of bone grafts for non-union, or plastic operations for the correction of ankylosed joints. This annoying recrudescence of sepsis caused the writer to make it a rule never to attempt surgical interference or the correction of bone conditions until after a period of six months, dating from the time of complete wound cicatrization; and in dealing with bony tissue where resistance to infection is very limited, it is wise to extend the time of surgical intervention as long as possible. This does not apply to wounds which have been properly sterilized and closed by successful secondary suture.

The Removal of Foreign Bodies.—

With the primary exploration of all gunshot wounds, it should be the rule to remove all accessible foreign bodies, because their presence tends greatly to lengthen the period of suppuration; but in wounds which have completely healed, some pieces of shell or ball may remain with immunity; however, whenever these foreign bodies are responsible for physical or even mental disturbances, their removal is clearly indicated. A perfectly harmless piece of shell may produce in the mind of the soldier psychic disturbances which, in time, may make him unfit for military service.

The contributions to surgical literature resulting from the experiences gained in the treatment of the almost unlimited traumatisms produced by the present war will add volumes to our neglected branch of traumatic surgery. What has been ac-

complished in the treatment of infected wounds far surpasses results obtained in ordinary civil practice, and the records of these experiences will be a lasting tribute to the ingenuity of modern surgery.

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SIMPLIFICATION OF THE CARREL-DAKIN METHOD OF WOUND STERILIZATION IN MILITARY AND CIVIL PRACTICE.

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It occurred to one of the authors (Albee) while making a study of the Carrel-Dakin method of wound sterilization in France last summer that unless the surgeon attempting its employment was somewhat of a chemist himself, or was as fortunate as Carrel himself at his military hospital Compiègne, Oise, France, in having always at his disposal a competent chemist to assay, titrate and neutralize the solution each time a new quantity of bleaching powder was used in preparing the solution; he was sure to have the same unsatisfactory experience that many of the hospitals of France passed thru when they first began to employ this method. And this is undoubtedly one reason why many surgeons today are not using the method, either because they have tried it with unfavorable results or because they have been deterred on account of the complicated process required in properly preparing the solution.

Apropos of this, the author in visiting a well-known military hospital in France last August was told that the Dakin solution had been tried at that institution but it was found that it produced irritation of the surrounding skin in spite of everything they could do and that it also caused a constant bleeding of the granulations of the wounds and that it had been given up as unsatisfactory. The explanation of these untoward results is undoubtedly simple. The particular lot of bleaching powder which happened to be used at that hospital at that time contained an unusually large amount of caustic alkali. Bleaching lime is a commercial product and varies within wide limits in its chemical content, and again it is very unstable and varies in its active chlorine content from fifteen to thirty-seven per cent. Again the sodium bicarbonate usually obtained in this country is composed largely of sodium carbonate and therefore is not trustworthy if used in neutralizing the caustic alkali. Therefore another uncertainty and difficulty arises. One needs only to read over the directions carefully drawn up by Carrel to realize the complicated process necessary to prepare this solution so that it will always be just right. To avoid the above difficulties it has occurred to the authors that if expert chemical work is necessary in the preparation of this solution, it could be far better done by the reliable manufacturing chemist and prepared in large quantities before it reaches the surgeon.

The preparation when ready for use is not stable, and therefore it cannot be put up in tablet form, or as far as that is concerned, in any other complete form, because chemical changes take place and the preparation loses its potency.

At their suggestion the authors believe that the Research Laboratories of H. K. Mulford & Co., have succeeded in producing this preparation so that it will give at all times the exact chemical content prescribed by Dakin.

It has been found necessary, however, to have it prepared in two parts which are simply mixed together in the specified amount of water and the solution at the proper temperature placed in the calorific receptacle of the apparatus about to be described. The chief object for devising this apparatus has been to lessen the amount of nursing care necessary to carry out this treatment properly, and to insure more uniform saturation of the dressing at all times and under all conditions—details which are essential for the best results.

The Carrel-Dakin method requires great attention to technic and imposes much work upon the hospital personnel. A band of enthusiasts, aided by a comparatively large and specially trained staff, will obtain results very different from those which would be obtained if the treatment became universal.

By using the apparatus and the carefully compounded preparation, herewith described, it is believed that the above statement will not hold true and uniformly good results will, in general, be obtained. The principal object of flushing the wound by releasing a stop cock on the distributing tube every two hours is to fill all the tubes so that the solution will flow from every fenestra. This necessitates a large amount of detail work and has been found to be unreliable. By having a drip control on every tube the delivery of the solution to every fenestra is assured and the maintenance of

its concentration is constant and much detailed work is avoided.

The Carrel method of disinfecting wounds is based upon the conception that to render an infected wound sterile it is necessary, *first*, to employ a suitable antiseptic in such a manner that it comes in contact with every portion of the wound; *second*, that the antiseptic is maintained in a suitable concentration thruout the entire wound; and *third*, that this constant strength is maintained for a prolonged period. If these conditions are maintained every wound will show response by a diminution and a final disappearance of microorganisms. Most surgeons will admit that the usual routine application of strong antiseptics will not sterilize an infected wound. The success of the Carrel method on the other hand is not due to any miraculous properties of some new drug or chemical. It is a well known fact, that Javelle water and Labarraque's solution which have similar properties have been used since 1792. The St. Thomas' Hospital has used chlorinated soda solution in dressing amputation stumps for over sixty years. In recent times hypochlorite solutions have been used for removing sloughs and controlling the odor of offensive wounds. In the early part of the present war the French surgeons used rather extensively Javelle water, which in France is a sodium hypochlorite solution, as they prepare Javelle water from the soda salt rather than from the potassium salt which is generally used in this country. They were however, compelled to abandon the use of this preparation because of the fact that many accidents resulted from its caustic action. The drawback to the more general use of hypochlorites as antiseptics has been the strongly irritating character of the com-

mercial solutions since they all contained free alkali or free chlorine.

Dakin, realizing the possibilities and advantages of an antiseptic solution with fewer objectionable qualities, carried out a series of researches in order to perfect or devise an antiseptic solution which would be neutral and not contain free chlorine. After his chemical experiments showed that he had been successful in preparing such a solution, he tested the solution clinically and after several months obtained such remarkable results from its application that he read his first paper on the subject before the French Academy of Science in the fall of 1915 in which he gave the details of his method of preparing the solution which is now known as Dakin's or the Carrel-Dakin solution. This solution, as is well known, is a 0.5 of 1 per cent. solution of sodium hypochlorite. The method of preparing this solution as given in the paper referred to is as follows:

A quantity of chlorinated lime and sodium carbonate are mixed with a certain quantity of water and allowed to remain in contact for several hours after which the mixture is filtered. This filtrate is then neutralized by the addition of boric acid. It was found, however, that by making a preparation according to this formula it required a rather large amount of boric acid in the neutralization which formed a large percentage of polyborates which themselves proved to be rather irritating. Dufresne pointed out this disadvantage and also the extreme variability of the chlorinated lime and evolved the following technic which should be used in making Carrel-Dakin solution.

The chlorinated lime before being used should be assayed. This is necessary because chlorinated lime is an unknown quan-

fect on account of the fact that the blood prevents the Dakin solution from coming in contact with the surfaces of the wound and also acts as an ideal culture medium. Another very important thing in this respect is that if perfect hemostasis is not secured there is danger of secondary hemorrhage.

After the wound has been thus mechanically disinfected we are ready for the introduction of the instillation tubes. The usual style instillation tube, with the ends tied, is unsatisfactory because of the frequent difficulty and pain attending the insertion of the tubes especially in cases of deeply penetrating and "thru and thru" wounds. There is another style of instillation tubes on the market in which the ends are closed by rounded glass or hard rubber plugs. These are also unsatisfactory on account of the fact that, no matter how secure the plugs may be under normal conditions, after the rubber tubing is in contact with the solution and secretions of the wound for a prolonged period, the tubing frequently becomes loose, and when the tubes are removed these hard rubber glass plugs may remain in the wound as a foreign body and make necessary an operation for their removal. We have, therefore, devised and had made, instillation tubes which remove the objections referred to above. As will be noted, these instillation tubes have closed rounded ends similar to those of ordinary catheters, except that the hole found in the catheter is replaced by a series of small lateral perforations making it possible, thereby, to secure these tubes in any kind of a wound with a minimum amount of difficulty or pain and without danger of foreign bodies remaining in the wound when the tubes are removed. In placing the instillation tubes, the guiding principle is to place them in such a position

and in such numbers as will guarantee the solutions coming in contact with every portion of the wound. In superficial wounds, burns, etc., the surface is covered with a thin layer of gauze and the instillation tubes laid thereon. The tubes are then covered with another layer of gauze after which thick layers of cotton and gauze, allowing only the ends of the tubes to protrude, are applied in order to absorb the solution. The instillation tubes should never be placed directly upon the surface of the wound as they may become encrusted and thus interfere with the proper instillation of the solution into the wound. If the tubes are to be placed directly on the wound they should first be wrapped with three layers of gauze, care being taken not to wind the gauze too tightly as the tubes may become clogged with the secretions of the wound. In penetrating wounds of the simple type, without lateral perforations, the tubes are introduced to the depth of the wound and the solution allowed to well up. In the case of wounds terminating in a cavity with collapsible walls, it is best to first introduce pieces of gauze to support the walls, thus allowing the solution to filter into all cavities, and thus come in contact with the entire surface of the wound. In "thru and thru" wounds the closed end of the tube is passed from the lower to the upper wound thus allowing the solution to run back and moisten the entire wound. The peculiar property of this solution is that, altho it is not irritating to the wound, it is generally very irritating to the normal skin, and for this reason it is necessary to protect the skin surrounding the wound by smearing it with yellow petrolatum, white petrolatum being inefficient because of the chemicals used in bleaching it.

In order to make proper use of the Carrel-Dakin solution for the disinfection of wounds it is necessary to have a suitable form of apparatus for holding the solution and conveying it in desired quantities at the proper temperature to the wounds requiring treatment.

Several forms of apparatus have been devised for this purpose, but to our minds they do not fulfill the requirements demanded in successfully carrying out the Carrel-Dakin technic. We have therefore devised an apparatus which, altho simple in its construction, overcomes the objections that have been raised to various appliances now obtainable.

Our apparatus is described in detail further on in this paper but at this stage we wish to call attention to the following advantages which it possesses over others and which have been responsible in a measure for our success with the Carrel-Dakin treatment.

Some Advantages of the Improved Apparatus.—A calorix bottle is used as the reservoir for the solution, and thus the temperature at which it is supplied to the instillation tubes may be controlled. The collapsible stand from which the calorix bottle is suspended can be quickly attached to a bedpost of any size. The rate of flow of the solution to each tube is under absolute control, being regulated from the distributing tube to the instillation tubes by means of individual clamps which are attached to each tube.

By means of the glass sight-feeds the attendant or *patient* can see at a glance whether the solution is being delivered properly to each tube. The instillation tubes employed have rounded ends so that they may be passed into deeply penetrating or

"thru and thru" wounds without great pain to the patient. Several wounds can be treated from our apparatus at one time because of the superior method of distribution. No support for the apparatus is needed at the site of instillation, thus saving the patient much discomfort.

Disadvantages in the Use of Some Forms of Apparatus Now on the Market.—Before devising our apparatus we could find no appliance on the market

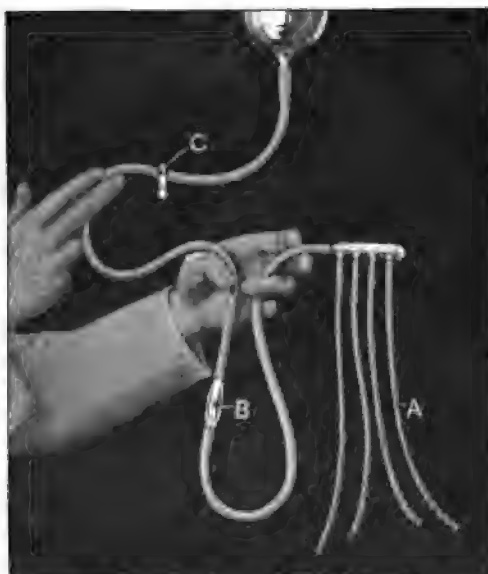


FIG. 1. Instillation apparatus supplied with but one sight feed and one clamp. This style apparatus is unsatisfactory because it does not distribute the solution uniformly to the instillation tubes. A, rubber instillation tubes with ends tied, attached to four-way glass distributing tube; B, glass sight feed; C, adjustable clamp for controlling flow.

by which it was possible to supply uniformly the solution to two or more different parts of the body from one container. Nor was there any satisfactory mechanical device available for attaching the container of the solution to bed-posts of any size without building a framework of some kind or a support at the site of injection. Further-

more, none of the appliances on the market offered a satisfactory method of controlling the flow of solution so as to insure uniform distribution to each instillation tube.

The two principal forms of apparatus found in use were those illustrated in Figures 1 and 3. The apparatus shown in Figure 1 is supplied with but one sight-feed and one clamp and is very unreliable because it does not permit uniform distribution of the solution to the instillation tubes. In other words, when the solu-

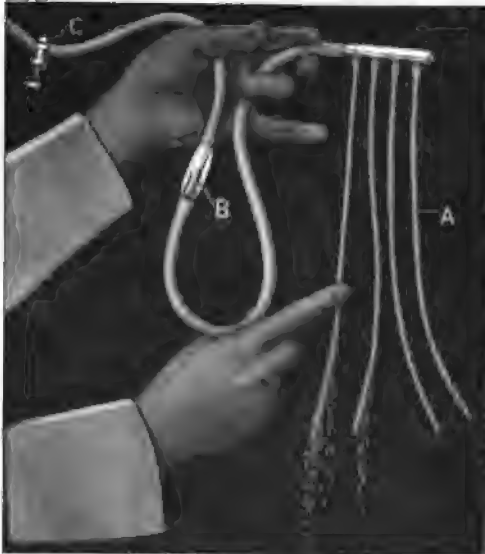


FIG. 2. Shows *uneven distribution* of solution by this style apparatus. Practically all of solution is carried by first instillation tube, very little by the second and only an occasional drop by the third and fourth.

tion is dropping in the sight-feed at the usual rate, practically all of the solution is carried by the first instillation tube and very little ever reaches the other three tubes. It is therefore necessary to flush the apparatus at intervals in order that some of the solution may be carried by all four tubes, and even then it is impossible to obtain an even distribution. Experiments show that when the clamp is opened all the way and the

solution is running full force, the third and fourth instillation tubes receive very little if any of the liquid, as practically the entire flow from the distributing tube is carried by the first and second tubes. (See Figure 2).

While this form of apparatus would be satisfactory for instilling large shrapnel wounds, it offers the further objection that its short instillation tubes attached to the

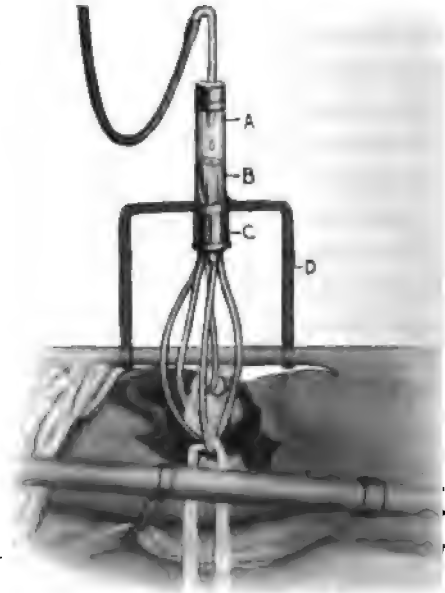


FIG. 3. Rose-irrigator. A, drop counter; B, gauze filter; C, perforated rubber stopper. Pieces of gauze bandage extend from B, thru the perforations in C and into each of the instillation tubes. The solution drops on the upper ends of the bandage in B and is carried by capillarity into the instillation tubes.

four parallel outlets of the distributing tube must all be directed to the same site of irrigation and cannot be inserted into the wound from different sides and at different angles.

Some operators have gone so far as to employ with this apparatus a glass distribut-

ing tube having as many as eight outlets connecting with eight instillation tubes, even tho experiments prove conclusively that practically all of the solution would be carried by the first two tubes unless it is supplied at so great a rate as to cause flooding of the bed. It is the purpose of the Carrel method of wound disinfection to supply

capillarity. There is no way of determining, however, whether or not the four tubes are carrying the solution as desired as the tubes are made of rubber. In case it is desired that only one or two instillation tubes from this apparatus or the one shown in Figure 2 are to be used, it is necessary to clamp the remaining tubes at the wound



FIG. 4-A. Improved apparatus in use. Note that the instillation tubes may be freely manipulated while dressing the wound without interference from the distributing tubes, sight feed bulbs or clamps, all of which are well elevated above the patient.

only enough solution to keep the inner dressings moist.

In the Rose irrigator shown in Figure 3, a piece of gauze bandage is inserted into each of the four connecting tubes and the ends of the gauze extend into the large glass sightfeed above. The solution falls on the gauze from the dropper A and is carried into the four instillation tubes by

thus causing more or less interference when dressing the wound, whereas in the improved apparatus the supply of solution for each instillation tube is independent of all others, and the clamping is done at the upper end of the apparatus. There will therefore never be more instillation tubes at the site of the wound than are required for irrigation. Another objection to the Rose

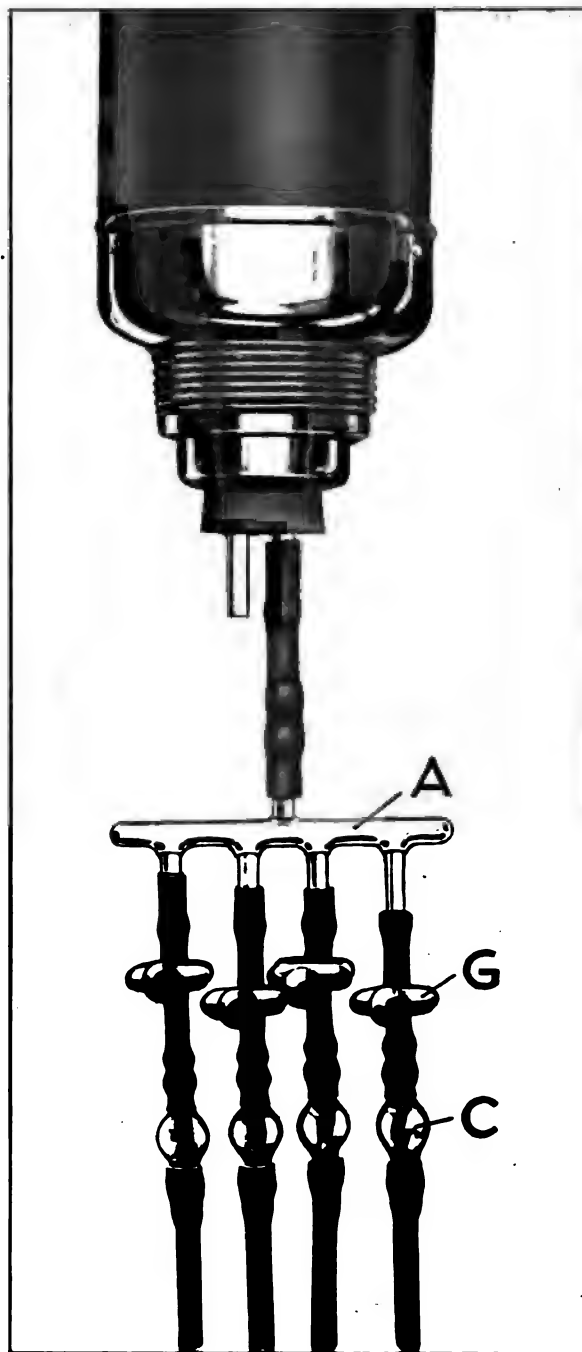


FIG. 4-B. Shows arrangement of distributing tube (a), individual sight feed bulbs (c) and clamps (g). Note that rate of flow can be observed and controlled in each individual tube.

irrigator is found in the fact that the glass reservoir from which the solution is distributed to the various instillation tubes must be held in a vertical position by some form of support at the site of the wound. If for example a patient should happen to have two wounds in the same leg, one above the knee and the other below the knee, it would be necessary to employ one complete apparatus for irrigating each wound. The disadvantages with regard to lack of simple attachment, insertion of instillation tubes, etc., discussed in describing the apparatus pictured in Figure 2 apply also to the Rose irrigator.

Detailed Description of Improved Apparatus.—As stated before our apparatus was designed to overcome all of the limitations referred to above, and the following illustrations and descriptions will bear out our claims for its superiority over existing devices.

Figure 4A shows the apparatus at the bedside in actual use. The collapsible stand shown in detail in Figure 6 can be attached to a bedpost of any size and is provided with a hook at its top from which the calorix bottle, (e) Figure 6, is suspended by means of the hinged eye (e^2) which is riveted to the base of the bottle. The object of using a calorix bottle as a reservoir is to enable supplying the solution at body temperature and to permit of using this apparatus for hypodermoclysis or Murphy drip.

Figure 5 shows the essential features of the apparatus, consisting of the glass distributing tube (a) to the upper end of which is sealed the short tube (a^1), used for connecting the calorix bottle (h) with the distributing tube by means of the pipe (h^1) which passes thru the stopper of the

bottle. A glass tube (h^3) used as an air inlet also passes thru the stopper and extends to the bottom of the calorix bottle. A number of tubes (a^2) are blown into the lower section of (a) and altho four of these tubes are shown in the illustration it is possible to vary this number according to the number of instillation tubes that may be required. The lower ends of the tubes (a^2) are suitably enlarged so that rubber

Fig. 5.

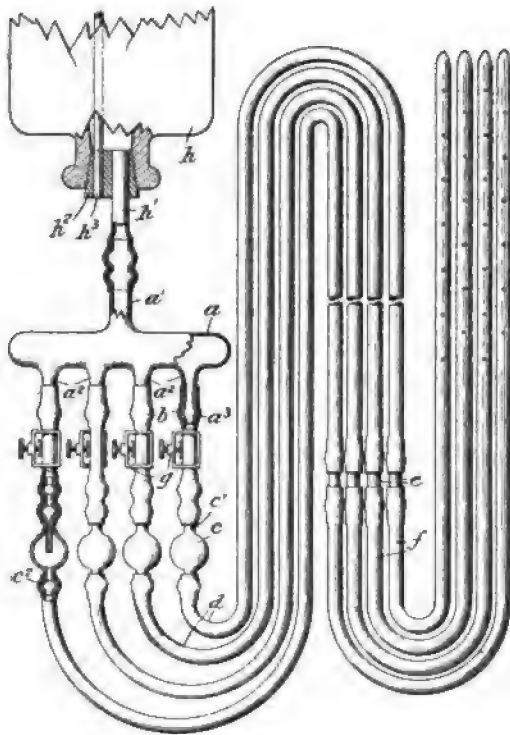


FIG. 5. Graphic illustration of improved instillation apparatus. Each connecting tube is supplied with an individual clamp and sight-feed which makes it possible to accurately regulate the flow to each instillation tube. See text.

tubing (b) can readily be slipped on, thus serving as connections between the distributing tubes (a) and the glass sight-feed bulbs (c). By means of these sight-feed bulbs (c) the rate of flow of the solution into the

instillation tubes can be readily observed. The short extensions (c^1 and c^2) on the sight-feed bulbs readily permit connection with the tubes (b) and (d). The connecting tubes (d) are readily attached to the instillation tubes (f) by means of short glass pipes (e) which have enlarged sections to insure snug union.

The rate of flow of the solution from the reservoir to the instillation tubes as observed thru the sight-feed bulbs is adjusted by means of the screw clamps (g).

When the apparatus has been adjusted and is ready for use the solution is poured into the calorix bottle, which is then corked and suspended from the properly elevated stand, thus insuring a free gravity flow. The liquid passes from the reservoir into the distributing tube (a) and from there into the individual tubes (a^2) which connect as previously described with the instillation tubes (f).

The surgeon, knowing the particular requirements of each wound or portion thereof, can adjust the rate of flow of the solution from each instillation tube independently of the others by means of the screw clamps (g), making his observations at the sight-feed bulbs (c).

By attaching the distributing tubes (a^2), clamps (g) and sight-feed bulbs (c) near the outlet of the calorix bottle the only appreciable temperature change in the solution would occur in the connecting tubes (d) between the clamps (g) and the point of instillation, as the flow of the liquid from the clamp to the wound is continuous and free. Therefore, the loss in temperature under ordinary conditions between these two points can be readily determined. Experiments have shown that in order to instill the solution at body temperature it

should be warmed to 75 to 85°C. before being placed in the calorix bottle.

When used for hypodermoclysis or Murphy drip our apparatus is superior to other appliances in that it offers no difficulty whatever for furnishing the liquid for irrigation at body temperature. The connecting tubes are made of special thick-walled rubber tubing having a very fine bore, thus causing a minimum loss in temperature in the solution as it travels from the reservoir to the site of irrigation.

Advantages of New Form of Instillation Tubes.—We have found that the usual style of instillation tube with one end closed by tying as shown in Figure 1 is unsatisfactory and often rather difficult to insert. Instillation tubes in which the ends are closed by rounded glass or hard rubber plugs are also undesirable because the plugs sometimes become detached when the tubes are withdrawn and remain in the wound as foreign bodies. We therefore advise the use of the instillation tubes of the style shown in Figure 5 (b) which have a rounded closed end such as is found on the ordinary catheter. The large hole of the catheter is, of course, replaced by a series of very small lateral holes extending over about half the length of the tube. Instillation tubes of this type can readily be inserted into any wound with a minimum of pain and they also eliminate the possibility of any foreign bodies being left in the wound when they are withdrawn.

The fact that these instillation tubes are supplied in our apparatus with the solution from individual connecting tubes in which the flow can be accurately adjusted, makes it possible to insert them from any angle into wounds located in different parts of the body. Furthermore, their use permits treat-

ing wounds on upper and lower surfaces of the body no matter whether they are in a parallel or perpendicular position to these surfaces. The instillation tubes in other forms of apparatus cannot be placed in more than one position without causing the formation of kinks in the tubes and otherwise interfering with the proper supply of the solution.

We have found that the two-way circular tubes sometimes sutured to the edges of superficial wounds for the purpose of supplying Carrel-Dakin solution to all portions of them do not answer the purpose, because the surface is usually not flat. One section of the tube is therefore on a somewhat higher plane than the other end and the solution naturally runs to the lower level, thus being carried away from the wound rather than being evenly distributed over the entire surface. With our improved apparatus it is possible to fasten one instillation tube along the upper edge of the wound and another along the lower edge, and as each instillation tube is attached to an individual connecting tube which receives its supply of solution independently of the others, uniform distribution to all parts of the wound is possible.

In order to avoid the necessity of erecting a wooden framework over the bed of the patient as a means of support which is necessary when using other forms of apparatus, we have devised a small, strong, portable, collapsible stand which can readily be attached to bed-posts of any size by means of the device indicated in Figure 6 (k) without danger of disfiguring the bed-

posts by means of the thumb screws (a^1) (b^1) (c^1) Figure 6. It can also be seen in this figure that the outermost tubular section (a) of the support has attached near its ends two metal strap lugs (i) which in cross section conform generally to the contour of the bed-posts and are provided near their edges with vertical slots (i^1) Figure 7,

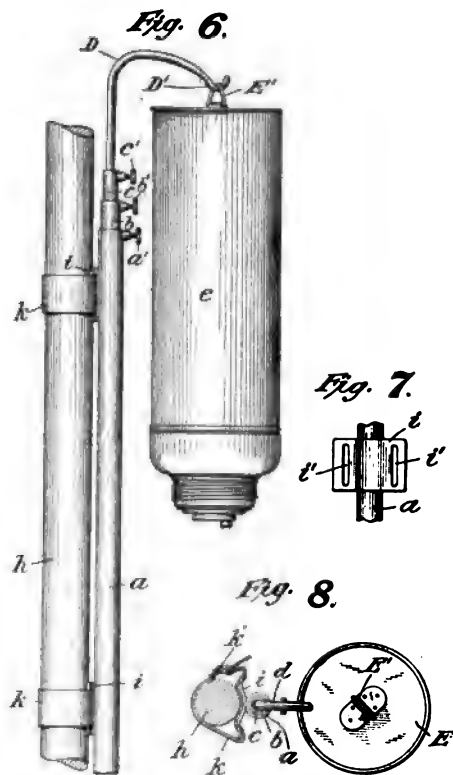


FIG. 6. Telescoping portable stand for supporting calorix bottle containing irrigating solution which can be attached to any size bed-post without danger of marring same. See text.

FIG. 7. Illustrates construction of metal lugs i containing slots i^1 through which the straps k pass and fasten stand to bed-post.

FIG. 8. Shows the relative positions of stand a, b, c, d , metal lug i , strap k and bed-post h .

thru which the straps (k) made of webbing are passed before being wound about the bedpost (h) Figure 8, and fastened by means of the buckle (k^1).

Supplying Solution Directly to Wounds.

—After the collapsible stand has been attached to the bedpost and the apparatus has been adjusted for use a gauze bandage is stretched from the middle of the stand to the opposite end of the bed. This acts as a support for the connecting tubes. (See Figure 4A). The tubes are coiled around the bandage to points directly over the wounds to be supplied with the solution. From these points the connecting tubes descend vertically to the instillation tubes. This simple device entirely eliminates the necessity for building a wooden framework over the bed as is required with many of the other appliances and permits the adjustment of the instillation tubes to any angle or location as referred to above.

If the splendid results obtained by Carrel are to be repeated by others, the technic must be vigorously carried out and the solution used must be very carefully prepared. It has been estimated that the "Dakin" solution represents but twenty per cent. of the cure and the technic of Carrel represents eighty per cent. It is believed that the apparatus and the specially prepared "Dakin Solution," herein described will aid very materially the beginner in both the preparation of the solution and the technic of wound treatment.

It is very important that the best co-operation exist between the surgeon, his assistants and the nurses in order that the acme of technical perfection be reached.

In military practice it is not always possible to begin the treatment until long after it should have been. Many of the wounded lie where they fall in "no man's land," from twelve to sixty-four hours before it is possible for them to be removed back to the first aid dressing stations. Nevertheless

the treatment should be instituted as soon as possible in these types of cases as well as infected wounds of long standing. It is surprising that the large percentage of success obtained in wound sterilization as well as primary unions secured by suture thereafter do not seem to be materially affected, in fresh wounds, by the presence of a compound comminuted fracture.

HOURS OF WORK IN RELATION TO EFFICIENCY AND OUTPUT OF MUNITIONS WORKERS.

BY

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This subject is suggested by an interesting article in the *Contemporary Review* and while the writer's viewpoint is that of the munitions worker and the employer in Great Britain, the question is of equal importance to the workers and employers in America, where munitions work has already reached extensive proportions.

In normal times in Great Britain the hours of boys under 18 and of women are limited by the Factory and Workshops Act to a daily period of employment of 12 hours, with breaks for rest and a short day on Saturday, bringing the total weekly hours of actual work down to sixty in non-textile factories and fifty-five in textile factories. But under the powers given the Secretary of State in war time, firms engaged in Government orders have been given permission in some cases to work overtime to an extent that would increase the weekly total to seventy hours a week (exclusive of meal times).

In addition it must be remembered that

the 12 hours daily employment does not include the time spent in getting to and from the place of employment over long distances during which time the worker is compelled to stand in an uncomfortable position in ill-ventilated and crowded cars the effect of which is perhaps as bad or worse than his work. This question has been investigated by The Official Committee on the Health of Munitions Workers. Referring to the employment of women, the memorandum says: "It is far from uncommon now to find some two or three hours spent on the journey each way, generally under the fatiguing conditions of an overcrowded train or tram, often with long waits and a severe struggle before even standing room can be obtained." Even the normal factory hours (twelve hours a day) are thus often extended to necessitate fourteen or fifteen hours' absence from home.

The ill-effect of long hours and the consequent fatigue upon the physical health of the worker, are marked.

The most obvious effect of fatigue upon the body is that due to contraction of the muscles. The life of one's body comprises, first, the assimilation of outside materials *i. e.*, building itself up, and secondly in breaking down this assimilated material into simpler chemical forms and getting rid of the waste products. These chemical wastes are rapidly formed during active work or exercise. When they accumulate in the blood they cause fatigue, a sort of blood poisoning so that a tired person is being actually poisoned by his own waste-products. If fatigue is followed by sufficient rest the body automatically cleanses itself. If the rest is insufficient the wastes are not completely removed and the body clogs itself with its own poisons resulting

in more or less serious injury to health. An example of this is seen in a hunted animal dropping dead not from heart strain or overexertion, but from sheer chemical poisoning. In addition to chemical poisoning, overwork causes the actual destruction of the energy producing substance found in human muscles, and finally overexertion causes injury to the nervous system even more serious than that caused by muscular fatigue. The Committee on the Health of Munitions Workers, found that the nervous system becomes exhausted before the muscles are tired out. In industrial work, consequently—both from the point of view of output and of health—observations of muscular symptoms of fatigue are not conclusive. The insidious effects of nervous overstrain unobserved by the worker come first.

Improvement in Health from Shortened Hours.—It has been found that the shortening of hours has reduced the incidence of sickness. This fact is borne out by the experience of health insurance companies, sick clubs, etc. For example, the Brunner Mond and Company's Works Sick Club showed a marked decline in illness after the introduction of three eight-hour shifts instead of the two twelve-hour spells previously in vogue in the company's works. In the Engis Chemical Works in Belgium the Director reports that the sick fund to which the men contributed in return for medical treatment and a money allowance during sickness, invariably showed a deficit under the longer hour system, but as soon as the shorter hour plan was well established the deficit was changed to a surplus.

The reports of the Committee already referred to, indicate most definitely that long

hours without sufficient intervals for rest, have a serious effect upon health and where continued over long periods are likely to cause permanent injury.

This fact in itself is a strong argument in favor of the shorter day. But the question arises. In this time of stress and necessity when munitions are urgently required, when the lives of our men at the front and indeed the safety of the Empire is at stake, is it not necessary to strain every nerve and muscle to keep up the output of shells? This might be so if overstrain of the workers would give the desired results. This brings one to the second point—the effect of hours of labor on output.

There is an instrument known as the "Ergograph" which records the effect of fatigue upon the power of muscles to contract. This instrument shows in a remarkable manner the effect of rest taken at the critical moment. Mosso, the Italian scientist puts it most aptly when he says: "Our body is not constructed like a locomotive which consumes the same quantity of coal for every kilogram metre of work. When the body is fatigued even a small amount of work produces disastrous effects. The workman who persists in his task when he is already fatigued not only produces less effective work but receives greater injury to his system."

It is well known from actual practice, that output has been maintained if not increased by a reduction of hours. The Zeiss Optical Works at Jena are run on a democratic scheme of co-partnership. The workers are of a well-paid and intelligent class. Some years ago a change from a nine-hour day to an eight-hour day was introduced by the virtual founder of the firm

and the inventor of the co-partnership basis, Professor Abbe. A ballot was taken of the adult workmen, a large majority of whom declared their willingness to do their best to produce as much in eight hours as they formerly did in nine. No changes were made in the working processes. At the end of a year the records of 250 typical workers in a number of different branches of work were scrutinized, and despite the lessened hours of work the output was increased 3.3 per cent. Some of the piece-workers thought at first that they were going behind but without any conscious extra effort it was found that they had actually turned out more in the eight hours than in the former working day of nine hours. Professor Abbe's analysis of the causes of this automatic adaptation to the reduced hours, is of the greatest interest. He divides industrial fatigue into that caused by:—

- (1) The amount of work done (*i. e.* the actual number of movements of the body in a given time).
- (2) The speed at which the work is accomplished.
- (3) The fatigue caused merely by being present in the work-place, standing or sitting in a particular attitude amid the noise and turmoil of a factory. This last form of fatigue is automatically reduced with every reduction in hours. To this fact and that of the need for proper time to recuperate between working hours, Professor Abbe attributed in general the remarkable results of his experiment.

War conditions have produced fresh evidence of the ill-effects of excessive hours on output and the good effects in reduced hours in the same direction. The reports of the Chief Inspector of Factories and of the Health of Munitions Workers Committee, all go to prove that any lengthening of the hours beyond 6 p. m. and a total of

eight and one-half hours of work exhausted the workers and was of no value in increasing the output. The experience of employers quoted in the report is to the same effect. The principal Woman Inspector says that where eight-hour shifts have been established "the physical appearance of the workers compares very favorably with that of those in other works, on the longer shifts and highly favorable reports have been made of increased output (in one case to the extent of a third) while need for supervision was decreased."

The Committee of the Health of Munitions Workers point out that long hours do not mean increased output and say "taking the country as a whole the Committee are bound to record their impression that the munitions workers in general have been allowed to reach a state of reduced efficiency and lowered health which might have been avoided without reduction of output by attention to the details of daily and weekly rests."

It is the writer's firm conviction that in shorter hours of work the interests of employer and employee are identical. The well-paid and naturally well-fed mechanic, doing a reasonable day's time, will be healthier and consequently more efficient than the ill-paid, under-fed, long-time worker. The former is bound to take more interest in his work, he will have less tendency to grouch about his condition. Mentally and physically he will be a better man, a better citizen and his work will consequently be of a higher type.

THE VOCATIONAL RE-EDUCATION OF THE DISABLED SOLDIER.

BY

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The vocational re-education of the disabled soldier involves many considerations. Primarily, it is, of course, a medical problem; but it is equally an educational and a social-economic problem; the factors composing it being interlocked and related. The question of the selection of a suitable vocation is of prime importance and illustrates the many-sidedness of the problem. Clearly, the first consideration is the remaining physical ability of the man; at first, this would appear to be purely a medical question. But how many medical men have a knowledge of the wide ramifications of modern industry and of the qualifications, both physical and mental, of the workers in more than a very few lines with which their practice may have made them familiar? Here, then, is the place and field for the "vocational counsellor." He is a most useful officer whose functions in connection with vocational and industrial training for civil life are becoming increasingly important in modern school systems. This officer must have an expert knowledge of industries and also of the methods of training the workers in them; whether in a special school, in the commercial workshop or office itself, or partly in both. He must also be acquainted with the demand for workers in established industries and, also, in new or projected industries. Again, he must know the liability to seasonal unemployment and occupational disease of workers in a given industry; for disabled men should not be directed towards occupations where there is a strong probability of meeting these draw-

Diphtheria.—Where sudden relief is essential in diphtheria, says Gregory (*Med. Fortnightly*), the antitoxin should be injected intravenously. Ordinarily the intramuscular method would be almost or quite as efficient.

backs to a full livelihood. In addition to his technical qualifications, the vocational counsellor must also be very "human," for the objects of his advice are almost always a little out of key with their environment and the utmost sympathy and tact is required in their guidance and training.

There are often general and local considerations to be taken into account in the selection of a suitable vocation for a disabled man—considerations which are neither medical nor technical. Recognizing this, the Military Hospitals Commission has arranged that a third person shall be called in for counsel and advice when the question of a disabled man's new vocation is to be decided. The third member of this little body of three (termed a "Disabled Soldiers' Training Board") is nominated by the local Soldiers' Aid Commission and represents not only the local knowledge, viewpoint and sentiment, but also the unofficial, public side of the question. Fine service is being rendered by these unofficial members, who freely give their time and knowledge to the work. The previous occupation of the man is also to be considered and last, but by no means least, his own desires and wishes for the future; for unless the vocation selected appeals to the man, his successful re-education is well-nigh impossible.

In considering each case, a careful investigation is made into the man's educational and industrial history. Such significant facts as his place of birth, the nationality of his parents and the occupation of his father, are recorded; also, if the candidate for reeducation was born abroad, the date of his coming to Canada. Then follows a report by the vocational officer (counsellor) as a result of a long personal and intimate interview with the man, in which his appearance, his habits, his recreations, hobbies and

other personal tastes are obtained. The vocational officer also gives his judgment as to the vocations for which the man's ability and aptitude are evident, also the vocational officer's recommendation of a particular vocation and his reasons for the recommendation. The candidate is then examined by a medical officer, who reports on the man's remaining ability and powers, both physical and mental and also names any precautions which should be observed in the choice of a future occupation for the man. In this connection, a definite series of physical and mental tests are applied by the examining medical officer. From the information provided by the investigations of the vocational and medical officers it is possible for the Disabled Soldiers' Training Board (which, as indicated above, is formed of these two officers and a local layman) to make satisfactory recommendations as to the training of the disabled men.

The Military Hospitals Commission is only empowered to provide re-education in new vocations for men whose disabilities, resulting from their service, render them unable to follow their previous occupations. It is already evident, however, that many other men would be glad to undertake vocational training and it is also clear from the records of the industrial history of the large majority of the candidates for re-education, that there is in Canada a great national need for vocational and industrial training in the country at large, apart altogether from the particular aspects of the question as applied to disabled soldiers.

A reference was made above to the local Soldiers' Aid Commission. In each of the Provinces of Canada, the Provincial Government has appointed a commission of persons, representing all walks of life; the chief

function of these commissions being to provide employment for returned soldiers. They also assist in innumerable other ways in solving "The problem of the returned soldier."

The question is often asked "For what occupations are disabled men being trained?" Such a question does not admit of a categorical answer, for, as may perhaps be inferred from the statement as to the method of selection of an occupation towards which the disabled man may be directed, it is a personal, individual problem in every case. A few broad principles may be stated; the first and most important being that, if at all possible, the man's previous training and experience should not be "scrapped." Thus, a manual worker who is unable to follow his former trade at the bench or lathe, can often be trained to take a leading position in the same industry by an appropriate course of theoretical instruction, mathematics, drafting, etc. Another point is that, wherever physically possible, a disabled man should be directed towards productive work rather than to clerical or distributing lines. While there will be large numbers of men for whom light indoor work will have to be found, it is already apparent that the rigors of service in the field have turned the thoughts and desires of more men towards "indoor jobs" of a clerical nature than is good either for them or for their country. This is true of France as it is for Canada.

Not many of the men who have returned desire to go on the land, but one avenue of promise in that direction is opening up, and may be termed the "Farm Machinery Route." There is a large and growing demand for men who understand the care and use of tractors, gasoline engines, pumps, threshing machines and the hundred and

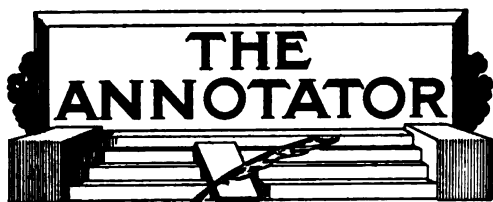
one other labor-saving appliances of the modern farmer. In the western provinces, training for such work bids fair to be one of the most popular and useful lines which are undertaken for partially disabled men.

The civil service offers another good field for the employment of disabled men, and classes of preparation for the examinations for admission to the service are a feature in most of the re-education centers. Training, leading to clerical and office positions, is also provided for partially disabled men.

During the period of training which is necessary to enable a disabled man to learn a new vocation, provision is made for his maintenance and that of his dependents. The cost of his training, including books and materials is also borne by the Government, so that a man may take his course free from worries. Further, to give him full opportunity, the maintenance allowances are continued for one month after his period of training is complete.

A word must be said about the training which is offered to all men during convalescence in Canadian Military Convalescent Hospitals, irrespective of whether or not they may later be unable to return to their former occupations. A wide range of training is provided and has been proved to be of three-fold value. First, the disciplinary troubles which are always present when a body of men have time hanging heavily on their hands disappear almost entirely when vocational classes are established; second, occupation during illness or convalescence is of undoubted therapeutic value and assists materially in restoring men to health; and, third, many men are enabled to earn more money upon their return to civil life because of their improved capacity from the training they have received. As a pioneer in the

field of occupational therapy on this continent has well put it, "A better job, or a job done better," is the motto for the self-improvement classes provided during convalescence.



Military Training Camps for Boys.—

There is no doubt that training, from all points of view, is good for the young. The boy or girl who has been subject to no restraint is apt, nay certain, to grow up impatient of control and to some extent, ill balanced in mind. Of course, too much discipline is a fault on the other side. The happy medium should be preserved.

In America, on the whole, children too often are allowed to have their own way to their detriment. While, perhaps, independence is promoted thereby, laxity of control tends to careless habits and even license. In Germany discipline is too rigid.

Therefore, there is no denying that military camps for boys possess various excellent points. They combine a salutary amount of discipline, with a healthy mode of living and clean association. The young are notoriously imitative and take their cue from their leaders. The example set them by their officers in a military camp is an incentive to improvement that will prove of incalculable value in later life.

It goes without saying, that physically the life is in a high degree healthy, just as much as it is mentally stimulating.

The question of feeding boys in a military camp is very important. Growing boys require a great deal of nourishment, and this must be of fitting character. The rations for boys living under such conditions have been laid down, or rather, suggested by First Lieutenant W. E. Fitch, Medical Reserve Corps, U. S. A., in an able article appearing in *The Military Surgeon*, May, 1917, in which he lays down the daily menu

for a week of what he considers a well balanced ration for a growing boy; a ration which will furnish about 125 grams of protein daily and an average of about 4,300 calories. Lieut. Fitch also emphasizes the fact that unless food contains sufficient vitamin principles, no matter how well balanced the ration may be in the ternary food elements, how large quantities are consumed, or how high the caloric value may be, there will be malnutrition.

Dr. Fitch has shown that not the least of the benefits of military camps for boys come from the opportunity afforded for promoting their health by placing their diet on a sound and scientific basis.

The Question of Salvarsan.—Among the many inconveniences, if so mild a term properly expresses the situation, brought about by the war in Europe has been the more or less complete cutting off of the drug supplies which formerly entered this country from Germany. The great majority of the newer drugs came from that country, in fact, Germany had practically a monopoly of the manufacture of the synthetic products, and of these none was more largely used, or the loss of which was more greatly missed than salvarsan and neosalvarsan. Their value in the various stages of syphilis has been thoroly established and the inability to secure them in adequate quantities from Germany, created, for a considerable time, an exceedingly grave situation. Of course, the attempt to manufacture salvarsan and neosalvarsan here surreptitiously has been made, with how much success it is hard to say, altho there is little doubt that some of the imitations placed upon the market have been comparatively worthless, while the prices have risen by leaps and bounds, until in some instances they were almost prohibitive. From all points of view the salvarsan situation has been, to say the least, disquieting. The products were very expensive and for the most part they could not be relied on, that is, they have not imparted the confidence that was placed in those made in accordance with the Ehrlich processes.

However, in an article published recently in the *Medical Times*, it is stated that for-

mer Congressman H. A. Metz of New York has made an announcement to the effect that he has entered upon the manufacture in Brooklyn of salvarsan and neosalvarsan following the Ehrlich methods. Dr. G. P. Metz, a chemist of repute and a brother of the Congressman, has received thoro instruction at Hoechst in the manufacture of these products, and as a consequence the Ehrlich processes will be carefully and correctly carried out in Brooklyn under the supervision of Dr. Metz.

It is further said to be the intention of Mr. Metz to keep down the price of salvarsan to the lowest possible point, and in this connection it is worthy of remark that unlike many importers who raised their prices enormously after the opening of hostilities, he refused to take advantage of the necessities of the public. Unfortunately, it is more than likely that in the near future there will be a greater call for salvarsan and neosalvarsan than there has been in the past. The collection of large bodies of lusty men in the prime of life in training camps will tend to increase the occurrence and prevalence of the venereal diseases and it is therefore eminently desirable that we should be prepared to meet them with all the weapons at our command. The curative agencies, salvarsan and neosalvarsan hold pre-eminent positions, but in order to be effective these must be properly made. Imitations have been sold within the past few months which were wholly innocent of arsenic and thus it would appear to be in the best interests of all concerned that standard products should be employed, if possible those made after the Ehrlich's processes. The medical profession will welcome the announcement of Congressman Metz and appreciate the spirit he shows in instituting this new enterprise.

The Prophylactic Clinic.—With the advent of summer, renewed efforts will be made to further decrease the wonted mortality of infancy. Experience with infant milk stations most assuredly has demonstrated that the main factor in the control of summer diarrhea consists of the education of mothers in the general hygienic care of infants and particularly in the importance

of maternal nursing or the careful preparation of individualized formulae.

No longer are hospitals and dispensaries overcrowded during the summer months with the little sufferers from gastroenteric disturbances. The stress has been removed from the remedial factors to the prophylactic agencies.

Dorwarth in the *Archives of Pediatrics*, March, 1917, points out that hospitals treating infants and children fail to live up to their obligations if they give care only during illness. He urges that departments of preventive medicine be established as distinct units of children's hospital organization with a view to performing the high type of service necessary to maintain children in a state of health. This suggestion is not entirely new but the fact that so few departments of this character have been organized demonstrates the importance of the constant repetition of an excellent idea to secure its adoption by even a limited number of traditional institutions.

In different cities of the country there have been established prenatal clinics, infant consultations, health centers, health clinics, diagnostic centers, social service departments and similar practical methods for the education of parents, the alleviation of economic distress, and the conservation of child welfare. It is patent that the various functions, implied and involved, are not mutually exclusive but overlap one another in ideals and practice, so that for efficient service a combination of all of them is essential with a centralized form of organization.

Many years will elapse before the general public will be willing to employ physicians as prophylacticians. There does not appear to be a full realization that health is an asset to be conserved, while disease is a liability that may frequently be avoided, decreased, or postponed. In the constant campaign for human betterment attacks are made first upon one specific disease and then upon another. One group of the community is fighting against tuberculosis; another is profoundly interested in cardiac conditions; a third focuses attention upon venereal diseases. One organization concentrates its efforts upon the production of a supply of pure milk; a second popularizes fly-swatting

or the elimination of the mosquito. One national committee strives to prevent blindness, another fights against mental defects, while a third strives to combat alcoholism. This illustrates and typifies the divergent forces at work in the community, stimulating interest and arousing enthusiasm in definite phases of public health work. In order to make the results of propaganda most effective it is imperative that there be practical application of the ideas developed and corroborated thru experience. The rules of health must reach into the home.

To secure effective education for healthful living the appeal must be made to parents while their minds are not distracted by grief or anxiety. Their pride in their children may be utilized with the remarkable leverage of personal advice and encouragement. In so far as may be possible it is advisable to take advantage of the opportunities afforded by established hospitals and dispensaries to attract and to hold for health education the large mass of people now seeking remedial assistance. After the acute symptoms have subsided and convalescence is well established, educational treatment should be instituted.

The prophylactic clinic represents a distinct step in the right direction. The educational merit of a clinic of this order is inestimable. It will serve as an effective medium for training the minds of the visitors to the relative advantages of maintaining health as compared with the wastage of time, money, strength and power thru disease. The coordination of health conserving efforts in hospitals and dispensaries should not be limited to those treating children alone but should be incorporated in the working plan of every well organized hospital or dispensary. Thus there would be established a large number of health forums thru the medium of which the propagandists would be able to give their most particularized advice, while physicians, nurses, social workers would be enabled to cooperate with the highest degree of efficiency and supplement in manifold ways the efforts of educational institutions, hospitals and health departments. The practical effect and value of the development of such medico-social work is unlimited.

It would serve to link the profession up with health and living as intimately as it is now related to disease and death.

In Re the Postal Section in the War Revenue Bill.—Following is a communication addressed to the members of the Finance Committee of the Senate of the United States. We print this in its entirety as we feel sure the medical profession will appreciate the soundness of the arguments brought forward.

"On behalf of the American Medical Editors' Association, including in its membership representatives from practically all of the leading recognized medical publications of the United States, and also on behalf of the New York Medical Publishers' Association, made up of duly authorized representatives from the following fourteen medical journals of National circulation and importance:

American Journal of Surgery
American Medicine
International Journal of Surgery
Medical Record
Medical Review of Reviews
Medical Times
New York Medical Journal
Critic and Guide
North American Journal of Homeopathy
Archives of Pediatrics
American Journal of Obstetrics
American Journal of Urology
The London Lancet
British Journal of Surgery

we respectfully protest against the proposed plan of the emergency war revenue bill your honorable Committee now have under consideration, to increase second class postage rates.

Our reasons for protesting against the imposition of a tax, in this form and manner, on all publications generally—and on medical journals in particular—are as follows:

First. A tax such as this proposed increase of second class postage rates is fundamentally and economically wrong, inasmuch as it places an increased burden on human effort, or the process of human production.

Second. The whole newspaper and periodical publishing industry—our medical and scientific press especially—has been built up, and is essentially based upon, the one cent per pound rate established under the Act of Congress, March 8, 1879. Our subscription and advertising rates, the salaries paid to our employees, and the entire organization and make-up of our respective journals, have all been regulated by, and adjusted to, this definite agreement by and between the United States Government, and the newspaper and periodical publishing industry of the country.

Third. The publications of the country—the medical and scientific press particularly—are already laboring under a terrible burden—the enormous, and undoubtedly abnormal, increase in cost of paper—which has in many instances "wiped out" all profits, and brought innumerable journals to the verge of ruin. We are told that we can expect no relief from this paper situation under two or three years, and possibly not then.

Fourth. The proposed increase in second class postage rates means a sudden increase of nearly 400 per cent. in the cost of getting publications—medical, scientific and technical journals in particular—to their subscribers; or to state the cost in cents per journal, an increase of 2 to 6 cents on each copy, and in respect to many of the larger publications, an increase each year amounting to considerably more than the subscriber pays for them.

Fifth. Unlike the grocer, or purveyor of commodities of fluctuating price, the publisher cannot "pass along" any sudden or unexpected increase in cost, inasmuch as practically all of the income of the great majority of publications is based on subscription and advertising contracts covering definite terms, usually one or more years, as also are many of their costs, especially in respect to labor, printing, paper, etc. Consequently, it is absolutely impossible to make any immediate adjustment of income, or effect any immediate economies in the principal items of expense, to meet or offset the additional cost this proposed increase of second class postage will create.

Sixth. The amount paid by each publication for its transmission under second class rates, represents only a small proportion of the total amount paid out for postage. In other words, the circulation of a publication involves much correspondence, and the distribution of many extra pieces of mail, at other than second class rates, and under classes which the Post Office authorities admit to be very profitable. Increase of second class rates, with the inevitable curtailment of each publication's activities will, therefore, lead to a real and substantial decline in the expenditures for first, third and fourth class postage; this cannot fail to mean a loss in Post Office revenue that obviously will materially cut down the expected returns from the proposed increase in second class rates.

Seventh. There are over three hundred reputable, eminently useful medical, drug and scientific journals, many of them of small circulation to be sure, but all of which serve a very valuable purpose and perform a very important function. These medical journals meet the needs of the 140,000 practicing physicians of the country, serving as mediums for the interchange of ideas, the dissemination of medical and surgical knowledge, the announcement and report of important meetings, new books, notable inventions and discoveries, and the advancement of everything pertaining to public health. Many of these journals are owned, controlled and directed by physicians in active practice and published with no intent nor desire for monetary profit and solely in the interests of medical and surgical progress. Every dollar available goes to increase their efficiency and broaden their utility. To increase the second class rates of these earnest, useful—we might say indispensable—publications under the proposed plan, means either their destruction and annihilation, or a very great curtailment of their activities and restriction of their circulation. The cost of delivery of the

great Eastern and Middle Western journals to readers beyond the first and second zones will be so great that they will be forced to confine their circulation and activities to their nearby districts. This will mean a narrowing of each journal's breadth of view, and therefore, influence for good, with serious loss to physicians in the outer zones, who will be denied the up-to-date, stimulating and thought inspiring literature they have depended upon and need to fulfil their whole duty and render their highest service to those who look to them for medical care and guidance. Deprived of the principal means of keeping in touch with the medical advances being effected thruout the world, the doctors in the zones farthest away from the great publication centers, Boston, New York, Philadelphia, St. Louis and Chicago, will surely become less efficient as practitioners and less alert and capable in promoting public health.

Eighth. The second class rate established in 1879 was designed to promote the publishing industry and—in respect to the medical, drug and scientific press particularly—to aid and advance the spread of useful and valuable information—briefly to educate the people, especially those engaged in greatly needed or desired pursuits. Call it subsidy, government aid or support, or whatever best describes it, the fact remains that the Government sought to advance the interests of the American people by thus promoting the growth and progress of the means recognized as holding greatest potentialities for educating them and bringing them in closer touch with each other; to make the United States of America one great country instead of a large number of sections. In regard to the influence on medical progress and the advancement of public health matters the Government builded well for the wonderful things that have been accomplished in medical and sanitary science have come to pass mainly thru the development of the medical press, not only made possible by, but resulting from the institution of a one cent per pound rate for delivery to any place in the United States.

Ninth. The medical journals are more needed today than ever before in the history of our country. Careful study shows that approximately 25,000 doctors are going to be needed at once for military service. To carry this message to the doctors of the land, to crystallize their natural patriotism, to help them to decide and arrange their affairs so they can rally to the Nation's imperative need, and to keep the physicians of the Nation in touch, not only with what is going on in Oshkosh or Denver or Providence, R. I., and their immediate environs, but with the triumphs, successes and glorious sacrifices of medical men all over the world, is a service the Government cannot afford to stop or restrict, as it surely will if it raises the second class rates of postage."

In view, therefore, that an increase in the second class rate of postage will mean the imposition of an impossible and intoler-

able burden on publications already staggering under the terrible load of increased paper cost; that many medical and drug journals will be destroyed—"wiped out"; that those able to struggle on will be forced to curtail their activities and restrict their circulations to nearby zones; that there is no way that the increased expense can be passed on, not alone because of the nature of the business, with its fixed incomes and costs, but because the doctors, due to the sacrifices they must make, can stand no advance in the price of their journals; that the medical journals of the country are conducted not for profit or gain, but for the purpose of promoting professional ideals and increasing medical efficiency; that the doctors in the zones distant from the publishing centers will suffer irreparable loss thru being denied the broad up-to-date literature they have been enjoying and thru which their wonderful efficiency has been acquired; that the principal and most effective means of securing the doctors so urgently needed for military service will be destroyed; and finally that the most powerful and most essential force in the country in promoting public health and in safeguarding the people against pestilence and disease will be destroyed entirely or greatly restricted in its capacity for service, we pray that no increase or change in the second class rates be made at this time.

No profession is doing more, or will do more, to serve and protect the whole Nation than the medical and its collateral branches. No other group or class of publications has a deeper sense of obligation to the country, or more earnestly desires or intends to show our love and devotion to the Nation, and all it stands for. Give us a chance to go on and work out our destiny, without asking us to assume a burden we cannot possibly carry without "falling by the wayside" or faltering dangerously, and we will do our part, never fear. We see our duty, we know our possibilities, we will be proud to place all we can do, or any profits we can make, at the command of the Nation in its hour of need. Permitted to live, and forced to carry no more than the burden we have some prospect of becoming able to, we can render a service no other agency can. But killed, annihilated, or so loaded that we must bend every energy and effort to keep

an abnormal burden from crushing us, we will be able to do little or nothing.

Respectfully submitted,

H. EDWIN LEWIS, M. D.,

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The Prevention of Venereal Disease in the Army and Navy.

Venereal disease is not only one of the most prevalent in armies and navies in time of peace, but its ravages are immensely increased by the conditions of war. From time immemorial such has been the case, and of course the present war is no exception to the rule. In fact the scourges of syphilis and gonorrhea have been especially evident and widespread in the vast armies campaigning in different parts of Europe, and the problem of how best to cope with this situation is, according to accounts which have come from abroad, one of the most serious and perplexing which confronts the military and medical authorities of the various warring nations. In ordinary times venereal diseases are responsible for a very large proportion of the disabilities which occur among soldiers and sailors, and in these extraordinary times, not only is the military efficiency of armies greatly diminished thereby, but infection is spread far and wide thruout the civil population.

It is a truism that prevention is better than cure, and this very obvious statement applies, perhaps, more particularly, to venereal diseases than to any other malady. An infected female possesses almost unlimited potentialities for evil, and may be the means of ruining physically and mentally large numbers of the very flower of the race.

In a recent issue of the *Medical Record* (April 28, 1917) Dr. Abraham Wolbarst,

a genitourinary surgeon whose views invariably command thoughtful attention, has a paper in which he outlines a plan for the prevention of venereal disease in our military forces. First of all he points out very properly that the question should not be considered from the moral but from the medical point of view. It may be true that the ideal soldier or sailor should be free from the sexual instinct. But neither soldier nor sailor is thus constituted and therefore the matter must be grappled with, not from the moral or sentimental aspect, but from the physiological. At the same time, it cannot be denied that moral scruples do deter many from gratifying their carnal appetite promiscuously, and in consequence morality does play a role of some importance in the fight against disease resulting therefrom. The great outstanding facts of the problem, however, are first that in order to deal effectively with venereal disease it must be attacked in a practical and scientific fashion, and second that the only sure means of checking its ravages are by the institution and enforcement, as far as possible, of well conceived prophylactic measures. Dr. Wolbarst accordingly suggests in the paper above referred to, the following plan of organization and service which cannot fail to appeal to those who recognize the seriousness of the problem:—A medical department or service within the regular medical service, which shall deal exclusively with venereal diseases. This department shall be in charge of an officer, not necessarily but preferably from the regular army medical corps; a man of proven executive ability, who has had, in addition, some experience with venereal diseases and their prophylaxis. Each division, brigade and regiment shall have its venereal officer, who shall be responsible for his own particular unit. The number of venereal officers to be attached to the respective units can be determined by the authorities experienced in these matters; one officer would probably be sufficient for a regiment, but possibly two or more may be required.

Taking the regiment as a convenient unit for the purpose, Dr. Wolbarst proposes a long list of prophylactic measures. Within the limits of this article it will be hardly expedient to set forth, at length, all

these propositions. Educative methods are suggested. No alcoholic liquors are to be sold to enlisted men. In order the writer takes up the punishment of any soldier who develops a venereal disease; the reward of those who do not acquire the disease; the provision of personal prophylactics for every man; the desirability, if infection takes place of locating "the woman in the case," and finally the necessity of employing means to prevent her from being a further source of infection. Obviously the personnel of the venereal service will be a matter of some concern, but inasmuch as the training camps will probably be situated within reach of the big cities, the service of competent specialists may be called upon. As Dr. Wolbarst suggests this will easily become possible if arrangements can be made whereby men with family responsibilities need give only part of their time to this work.

Careful consideration of the plan outlined by Dr. Wolbarst leaves no doubt of its feasibility and if carried out with the intelligence and ability which distinguishes all the work of our army medical corps, it should be productive of far-reaching results.

It goes without saying that some steps should be taken early to prevent the spread of venereal disease in our armies. Prevention is the keynote of success in this direction and this is a point which must be emphasized. With the example of Europe before our eyes our medical authorities will be able to take warning and avoid the mistakes made there. Forewarned is to be forearmed and Dr. Wolbarst's thoughtful and illuminating contribution to this highly important subject should blaze the way to a course of action leading to immeasurable benefits, not alone to our soldiers but to our whole race. Dr. Wolbarst has done the country a real and substantial service by his earnest paper.

Treatment for Ivy Poisoning.

A prompt, liberal and constant application of a saturated solution of sodium bicarbonate in ice water to the affected parts will give relief and possibly complete cure within twelve hours.—*N. Y. M. J.*



Organotherapy in Hyperthyroidism.—

In a consideration of the treatment of excessive thyroid activity, in which rest, a diet rich in mineral salts, the removal of emotional irritation, the control of intestinal toxemia and fecal infections and suitable hydrotherapy are discussed, Henry R. Harrower (*American Journal of Clinical Medicine*, 1917, xxiv, 264) mentions three distinct forms of organotherapy which have served him well.

The first of these is the posterior pituitary principle which is given for the control of the cardiac symptoms. He states that of numerous sedative heart remedies none seemed to exert so particularly beneficial an effect as "this organotherapeutic wonder-worker." It is given in one-half to one mil doses by intramuscular injection daily. "The usual effect of these injections is the reduction of the pulse rate from 30 to 70 beats per minute, while, by its remarkable influence on so many functions, it also favors the intestinal activities as well as increasing diuresis. According to Pal, the principle of the posterior pituitary lobe appears actually to exert a well-defined antagonistic action upon the unruly thyroid gland."

Pancreatin is recommended as another useful adjuvant. It is suggested that it may have a dual action in this respect, not merely increasing digestion and, hence, favoring the assimilation of much needed food, but also acting on the sympathicotonic condition characteristic of hyperthyroidism. This is explained as follows: Toxemia having its origin in the thyroid gland or from any other cause, gives rise to hyperadrenia. The dry mouth, the tremor and some of the other nervous manifestations seem to be as much of adrenal as of thyroid origin. Now it happens that the internal secretion of the pancreas exerts a decided antagonistic effect upon that of the chromaffin cells, and, in fact, for this reason

has been called by some the "pancreatic antihormone"; hence any means of facilitating this function of the pancreas (in addition to its external secretory powers) is distinctly in order.

The administration of pancreatin not merely assists digestion but favors the work of the pancreas, increasing its output into the blood of these chemical substances. While pancreatin is not by any means "the main treatment," Harrower considers that 15 grains or more per day, after meals, is a very useful adjuvant.

The third form of organotherapy is that recommended about a year ago by Richter. Harrower has given from 15 to 30 grains a day of desiccated anterior pituitary gland and judging from the results of the treatment of eleven cases, some ambulatory and others resting in bed, he believes that it brings about a distinct sedative action and recommends anterior pituitary as "a very useful adjunct to the other treatment outlined, which has become almost a routine in my hands because of its effectiveness."

Brain Extract (Kephalin) in Post-Operative Hemorrhage.—The phosphatid extracted from brain tissue has been in use for some months, and is variously known in the literature and trade as thromboplastin or kephalin. The most recent contribution to the literature on the therapeutic value of this substance is by H. L. Cecil (*Journal of the A. M. A.*, 1917, lxviii, 628), in which he reports the clinical use of kephalin at the Johns Hopkins Hospital clinics as a means of hastening coagulation and hemostasis after surgical operations upon the genitourinary apparatus and especially following prostatectomy.

The results are alluded to as "striking," since where packing impregnated with

kephalin was applied to the raw surfaces, there was practically no bleeding at all.

Cecil uses kephalin gauze and also coats catheters with it, using the following technique in their preparation: Sufficient kephalin is dissolved in an excess of ether (about a 5 per cent. solution is used) and is poured over long strips of gauze. This is then folded into packs, suitably wrapped and then autoclaved. The catheters are covered by smearing them with a very concentrated ethereal solution of kephalin, or the solution is slowly dropped on to the terminal three inches of the slowly revolving catheter. It dries quickly and when there is sufficient thickness of the kephalin, the catheter is sterilized in a glass tube, in which it remains until used.

Previously the blood coagulating principle in brain has been used successfully following nose and throat surgery and this phase of organotherapy undoubtedly is making for itself a permanent place in the armamentarium of the progressive surgeon.

Parathyroid Extract in Epilepsy.—The use of the extract of the parathyroid glandules has been recommended in several conditions in which convulsive or musculo-contractile phenomena were present. We have referred more than once in these columns to its use in the treatment of Parkinson's disease; it has also been recommended in eclampsia and it is almost a specific in parathyroid tetany or tetania parathyreopriva.

There seems to be some more or less remote relationship between the parathyroid function and epilepsy, and while this relationship is still altogether indistinct, it is of interest to note that in a recent article entitled "Research in Epilepsy" (*New York Medical Journal*, 1917, cv, 406) H. A. Knox tells of having treated 30 cases of epilepsy with dried parathyroid substance together with calcium lactate. The initial dosage of parathyroid was two grains three times a day, and later (in some cases at monthly intervals) the dose was increased by two grains; or four grains three times a day.

Of course the calcium exerted a certain effect, and it is not possible to speak dogmatically about the value of parathyroid therapy in epilepsy. However it is of interest to recall the intimate relationship be-

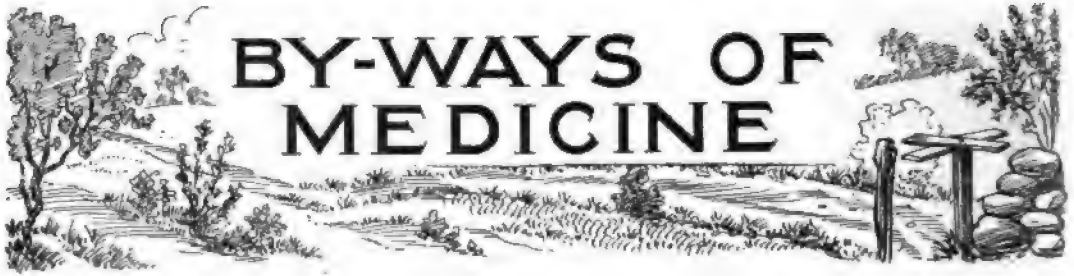
tween the physiology of the parathyroids and calcium metabolism, for it has been conclusively proved that the experimental tetany which follows parathyroidectomy can be reduced and altogether controlled, for a time at least, by the administration of suitable doses of a calcium salt.

Aspermia Treated with Adrenal Cortex.

—Seelye W. Little reports an unusually interesting experience in the *Boston Medical and Surgical Journal* (1917, clxxvi, 355). A man of 27, previously shown by expert genitourinary surgeons to be organically normal, was sterile due to aspermia. All possible causes were scientifically excluded and by a process of reasoning based on the physiologic findings of the endocrine relationships. Little presumed that the cells from which the spermatozoa develop were present but dormant; and also that some form of hypocrinism (internal secretory insufficiency) was responsible for the condition.

One by one the thyroid, pituitary and thymus were ruled out as likely causes of the condition. Two facts were emphasized by the physical examination which directed attention to the interrenals or the adrenal cortex—an excessive growth of hair and the large development of the external genitalia which were both present. There are enough indications in the experimental work in this line to lend more than a mere hint to the suggestion that the adrenal cortex is an important factor in the control of growth and especially sexual development. Little believed that at some time these glands were unusually active. He states that hyperaction of any organ is likely to cause eventual hypoaction of the organ; and on this supposition (that the man was impotent from corticular insufficiency) he was given four grains of desiccated adrenal cortex daily, the dose being later increased to six grains daily. Two months after this treatment was initiated, perfectly formed spermatozoa were found in a condom specimen of semen, and the finding was carefully confirmed by competent pathologists.

Little attention has been given to this subject. In fact adrenal cortex is not even easily obtainable. Such clinical experiences as this, however, serve as the real basis for development in organotherapy.



"We Can Start at Once."—These words uttered by the commander of the torpedo destroyer flotilla, the hour he reached the other side, when asked by the British authorities how soon he could take up the duties before him, deserves to rank with "Don't give up the ship," and Nelson's "England expects every man to do his duty." Newspaper reports state that the English naval officers were much surprised, for they expected that a few days at least would be needed to prepare for the arduous work about to be undertaken. "No," said the commanding officer, "we need waste no time, for we prepared ourselves during the trip across. *We can start at once.*"

There were few Americans who did not thrill with pride and satisfaction as they read of the safe arrival of this first naval unit, and its readiness to join Great Britain's wonderful navy in combating the U-boat menace and establishing the freedom—and safety—of the seas.

A great and wonderful lesson can be drawn from these words. The English press in commenting on this readiness of the American flotilla paid us the compliment of saying that it was characteristic of American push and energy. We like to believe this to be true, but is it?

When we stop to think of the time it took to pass the declaration of war against Germany, of the forty-two days required to provide the necessary legislation for raising an army, of the announcement from the Secretary of War that the training of men for the new army will *probably* start on September 1st, of the status of our national food situation today nearly three years after the start of the world war, and of many other facts, we may begin to have some doubt as to whether or not the virtue of readiness, of being able to "start at once" really is an American trait.

In some lines of endeavor, and in some

callings, energy and executive force are manifested so uniformly that they have become characteristic. For instance, there is the American Navy, the United States Marine Corps and the small body of men constituting our regular army; the men who belong to these branches of national service know the value of preparedness, and how essential it is, if anything is to be accomplished, to be able when the need comes, "to start at once." The American people can be justly proud of the fine spirit thus shown by some of our national departments, but in regard to many others—the less said the better.

The Medical Profession is Ready.—

Self-adulation or praise is never creditable and we have no desire nor intention to laud our American medical men for being ready and able to do their duty. There is a saying that army men object to praise, inasmuch as there is nothing they can do, or ability they can show, that can be greater than is always to be expected of them. Their duty is to give their best, and why should a man be complimented for doing his duty? To anticipate any less is to offer him a gratuitous insult. In many ways this same argument applies to medical men, and the people generally have grown so accustomed to expecting prompt and efficient service from them, that surprise is aroused only when anything less is given. All this is admittedly true, but nevertheless, physicians are human—dispute it who may—with all the frailties and peculiarities of human beings generally, and there is a wealth of satisfaction to be derived from the fact that the doctors of the land have been ready and able to meet the special and unusual demands that have arisen. The first military unit from this country to carry the Stars and Stripes on to the battlefield in France was a

hospital corps of American surgeons and their assistants. Several others have followed, and we are not exaggerating when we state that the work American medical men are doing on and behind the firing lines in Europe is maintaining every tradition and ideal of their country. Great efforts are going to be demanded from the doctors of the United States, and tho the profession has many sacrifices yet to make, there is infinite solace and satisfaction to be derived from the knowledge that no matter how sudden the call, how dangerous the work, or how strenuous the service, the medical men of the country are ready "to start at once."

Is Prohibition Possible?—There is a saying that nothing is impossible, but it is safe to venture that the author of this erudite observation never studied the prohibition question or gave any attention to the practical working of prohibition laws in a "dry" state. Congress is showing a disposition to try its hand at devising a law that will "do the trick," but we shudder to think of the mountainous task our gentle law makers are undertaking. Not the least of the difficulties they will encounter is the utter impossibility to get any exact and accurate information on the economic phases of the question. Men who can discuss all other matters with scientific exactness will as soon as this subject is broached seem to lose their capacity for accurate thinking. The character of the problem seems to affect the powers of logical deduction and expression. On no other basis can we account for many of the statements made. Professor Irving Fisher is the latest scientist to fall under the spell of prohibition distorto-mania and truly some of his statements are "fearfully and wonderfully made." Thus, according to a correspondent in the *New York Times* (May 20, 1917) Professor Fisher makes the statement that the food waste in the manufacture of distilled and fermented liquors is sufficient, if conserved, to supply a pound loaf of bread every day to 11,000,000 men!

Now, continues this correspondent, if Professor Fisher will take the trouble to inquire as to the food value of the grain after the alcohol has been extracted, and as to the tremendous importance of distillers'

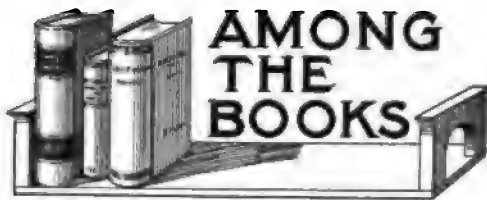
and brewers' grain in the fattening of cattle and in the production of milk, he would unhesitatingly apologize for his statement and regret its appearance in cold print. The cooking of the grain from which the alcohol is extracted enormously increases its value as a food for animals, and the real loss on account of distillation is very slight. Furthermore, the total amount of grain is infinitesimal, and as far as distillation is concerned under present high prices it is almost entirely confined to the manufacture of alcohol for munitions.

This prohibition discussion, which has been going on for forty or fifty years, has not been characterized by the sobriety of statement and accuracy and readiness to get at the truth, the whole truth, and nothing but the truth, that should signalize all great periods of evolution.

There is no question but that the people of this country are trying to abolish intemperance in the use of alcoholic beverages, but up to the present time there has been no falling off in the per capita consumption of either distilled or fermented liquors, and the shipments during the whole Spring of liquors into the States that are to be bone dry after July 1 have broken all records and have shown that individuals are trying to lay in a supply that will last them over for life.

If the foresight and care with which so many of our best families are laying in a stock of what Irving Cobb—or is it Billy Sunday—describes as "munitions of joy" is any measure of their sympathy with the principles of prohibition, it is not surprising that our prohibition laws in so-called dry states have been so conspicuously unsuccessful. It is a generally accepted premise of law making that a law will serve its purpose only so far as it enjoys the respect and approbation of the people it affects. A law that the people delight in evading in the spirit—even tho obeyed in the letter—is not a law that will ever achieve its purpose. People will never be kept from drinking by prohibitory laws. A certain small proportion may be kept by legal restrictions from getting alcoholic drinks, but the great majority of those who want to indulge in spirituous beverages will do so, law or no law. They will have intoxicating drinks in some form, if they have to make them from anything from fruit juices to garbage.

The bright particular fact in the situation is the growth of temperance, yes, total abstinence among thoughtful people. The drinking habit among the business and professional classes is certainly disappearing. That which stringent prohibition laws have never been able to do, education and common sense are gradually but surely accomplishing. Young men, middle aged men and old men have stopped cocktails, high balls, everything of an intoxicating nature because they have learned that they can get along better without stimulants. We would like to commend these facts to our law makers and urge them instead of spending money in trying to enforce laws that are sure to be evaded and broken, to devote a proper amount to wise regulation and the rest to educating our boys—and girls—to the soul depressing, body destroying influence of intoxicants. The most effective temperance force has been the knowledge that the "booze fighter" never makes the crew, the baseball team or the football eleven.



The food problem appears to be a paramount issue. Unusual efforts are being made to systematically develop an increased food supply in this country.

While the forces of production are being gathered, systematic effort is required to increase the general knowledge of foods in relation to their cost and worth in order to eliminate the needless wastefulness and extravagance so generally rampant.

Exhibits, demonstrations, lectures and books all must be a part in the campaign for popular education. *Feeding the Family* by Mary Swartz Rose (The Macmillan Company) deserves high recommendation to intelligent home-makers who desire to acquire the essential information needed for efficiency in family nutrition. Books of this character, possessing scientific accuracy, readability and practical application, are scarce.

The days have come when doctors' wives may join the general group of readers and improve their minds, and spare their pocket-books while building up their families' health. Feeding the family is an art which Mrs. Rose elucidates with much skill while interpreting the indulging science.

The past decade has manifested numerous advances in the study of children. Their mental health has received unusual care; and the relation of psychology to medicine and education has developed very rapidly. The value of the psycho-educational clinic in relation to child welfare is based upon the development of a new science of Orthophrenics and Orthosomatics as it has been called by J. E. Wallace Wallin in the *Mental Health of the School Child*. (Yale University Press).

While the volume consists of the publication of numerous papers and addresses previously presented or read, it is probable that a better understanding of the suggested science will be promoted thru its perusal. The psychological clinic is designed to afford "expert diagnosis of mentally deviating cases, and expert prescription and consultation. The second purpose of the psychological clinic is to serve as a clearing house for mentally exceptional cases. The third function of the psycho-clinic is research, particularly with a view to increasing and perfecting diagnostic tests and to extending our knowledge of the nature, causes and treatment of mental abnormalities. A fourth function of the psycho-clinic comprises education and propaganda—the dissemination of reliable information and knowledge regarding the condition and needs of the mentally abnormal classes." There are many statements in the discussion of orthogenesis which are not completely accurate as for example: "Children fed at the mother's breast double their weight at the end of the fifth month, and treble it at the end of the twelfth month, while those bottle-fed double only at the end of the first year, and treble only in the course of the second year."

"That 30 per cent. of infant mortality is due to inherited or congenital syphilis alone."

"That more than one-third of tubercular

cases in institutions come from tuberculous families which it is assumed are tuberculous because of inherited tuberculous diathesis." These statements, however, are quoted, and thus Wallin can scarcely be held responsible except for transmitting them to his reader. His purpose is to point out the importance of avoiding hasty generalization with reference to the mental status of children. He demands the collection of all possible facts concerning the developmental history, the family and heredity, the home and neighborhood information, the school history, the physical and anthropometric data which are to be tested by psychological and pedagogical examinations. The importance of this complete investigation may be understood in view of the fact that orthogenesis involves first a process of physical orthogenesis or orthosomatics by which he means any process thru which "any malfunctioning physical organs may be made to function aright, or by means of which healthy organs may be continued at normal functioning, so that the physical organism may develop to its maximal potential; and secondly, a process of mental orthogenesis or orthophrenics, by which I refer to any process, mental or physical, of righting any malfunctioning mental power, so that the mind may realize its highest developmental possibilities.

After all was it necessary to introduce another group of technical terms to specify the content of the terms eugenics and eutenics?

That "practical nurse" has enjoyed a certain measure of popularity tho her wisdom has never been accepted as of high order. It is curious that so many people willingly accept the advice of garrulous old women on anything pertaining to the welfare of infants. Slowly there is arising a type of motherhood which desires to acquire definite technical information to enable it to perform its duties to children in the most effective and safe way.

Many books have been written on the subject of feeding babies; some good, many bad, a few helpful. It is unfortunate, however, that *Feeding Babies* by H. Elizabeth Gould (Rebman Company) should have been published "For Nursing Mothers and Infants' Nurses." In an attempt at

simplicity a talky reminiscent style has been developed; but this possibly represents a good feature which fails to counteract the numerous evidences of little more than superficial knowledge of the subject treated. Confidence is not won by statements such as the following: "At present it is quite a common practice to chill milk, by passing it immediately after it has been drawn from the udder thru a machine which chills it within a minute to a degree that is considered equal to freeing the milk from bacilli." or to a great extent "many children have pains in their arms and legs which have been known for many generations as 'growing pains.' They always denote a weakness of the heart which should be watched for and carefully treated. I do not mean that medicine is indicated, but muscular food, and the child who has them should rest the heart by lying down several times a day." "If carbonaceous foods are in excess of proteids and carbohydrates, they cannot supply needful nervous and muscular energy." As an illustration of dogmatism and self-confidence which puts the medical profession to shame she writes: "For myself, I do not fear to begin feeding an infant on whole cow's milk." "I have never found a child that would not thrive on this food." (This refers to two-thirds whole milk and one-third oatwater).

On the other hand the book contains recipes for baked Indian pudding and strawberry shortcake.

What more need a nursing mother know?

Studying the literature of centuries can hardly be regarded as an "oblique pursuit" as suggested by Dr. Charles L. Dana in *Poetry and the Doctors* (Elm Tree Press). As an evidence of the interest and work of an enthusiastic literary mind he has collected patiently and written of the poetic endeavors of physicians.

The contributions of physicians to the poetry of the world have not been vast, tho numerous writings of individuals are to be found in the Anthologies of the classics and the modern. To live in tune with the spirit of Nicias and Nicander, to move on the hexametrical waves of Serenus and Macer, to study with Becher and Fracastorius is in itself a liberal education.

In these prosaic days, altho the output of the poets is far from failing, there is a definite pleasure in letting the mind wander back to the years when poetry was utilized to disseminate material truths, when poetic inspiration possessed the practical merit of auxiliary teaching. Dr. Dana has delved deeply into the fields of medical poetry and his grace in cataloging with notes the poetical work of physicians commends itself to those who possess interest in the world of feeling and imagination reflected thru the literary efforts of the ages. The conclusion of his essay invites a response from the divine spark of every physician, whose poetic genius craves expression.

"Poetry, I hope, still continues to stimulate and please the mind and to elevate and thrill the heart. At any rate that is what it ought to do, and more, for poetry is that form of art which gives the highest and the most enduring and satisfactory esthetic impressions to those who have wise, cultivated and sensitive minds. There is no form of art that can give such joy as can be gained by the recital or perusal of the best things of the best poets.

"So it is to be hoped that if doctors ever have the divine fire in them they will not prevent its expression, always remembering that only the very best poetry is poetry, and that mediocrity is more sin in poetry than in any other art."

Many indeed are the books on diseases of children, but it is a well known fact that those that are more than mere compilations or reprints are conspicuously rare. The haste with which authors have rushed into print with apparently no other thought or aspiration than to give to the world one more treatise on infant feeding has led the profession to look askance on the average work on pediatrics.

One has only to glance over a few pages of Dr. Louis Fischer's *Diseases of Children* (F. A. Davis & Co., Philadelphia) to understand why this book, now in its seventh edition, has won such a marked success and is looked on as one of the really noteworthy works on pediatrics. The author's exceptional powers of observation and extraordinary experience are reflected not alone by the practical angle from which he attacks

the many details of his subject, but also by the comprehensive and altogether satisfying way in which he describes the various diseases discussed.

It is not necessary to speak of the thoroly up-to-date character of this edition.

As an example of the manner in which the author has kept in touch with the latest researches in pediatrics, the article on vitaminosis may be mentioned. Advantage has also been taken of the epidemic of poliomyelitis which occurred in New York in the summer of 1916 to study this dread disease from the practical standpoint, and the entire problem has been exhaustively and adequately dealt with. Especially has the paralytic stage of the disease been discussed and the results of the serum treatment carefully considered.

A great deal has been heard recently from the battlefields of Europe of the value of blood transfusion, and the opinion has been generally reached that in cases of devitalization, its employment is usually indicated.

Dr. Fischer points out that in cases of devitalization proceeding from various causes he has had satisfactory results, and in cardiac weakness following or during the course of an influenzal pneumonia the outcome has been remarkably good. In his preface to this seventh edition, the author says that the aim of the book has been to present in a concise manner, practical points in the diagnosis and treatment of infantile diseases, for the benefit of the teacher as well as the general practitioner. In this endeavor he has abundantly succeeded, and more, for he has produced a work which is a veritable vade mecum on the subject of infants' and children's diseases and their treatment. Its language is eminently lucid and he wastes no space in needless descriptions or discussions.

The arrangement of the book is excellent and the numerous illustrations serve well to elucidate the text. There is no denying the place Dr. Fischer's book fills as one of the most useful and authoritative contributions to the practical study of diseases of children. We know no work on the subject more truly helpful.

Fischelis a year ago drew attention to the increasing scarcity of imported medicinal products, and urged the utilization of

available native supplies. He made an earnest plea for a larger use of galenicals, especially of indigenous plant origin. Prof. A. Tschirch of the University of Berne, in a recent address, deprecated the increasing use of the so-called active principles and synthetic medicaments, and that many physicians have disaccustomed themselves to the use of plant drugs. The wish expressed by him in London in 1909, "Let us go back to drugs," has already met with a larger echo than he dared hope at that time.

Blair in his *Botanic Drugs* (Therapeutic Digest Pub. Co.) has presented in concise form a convincing argument for the restudy and enlarged use of galenicals. He is a trained pharmacologist as well as an active practitioner of medicine. He is thus competent to weigh the evidence presented from the research laboratory and that of the bedside. The author frankly admits he "realizes the fact most acutely that it is quite impossible, in our present state of knowledge, to prepare a truly scientific text" on the subject. But this deplorable state is, in a measure, a reproach to modern medicine. Galenicals have been used empirically for over 3,000 years, and their scientific study is a common duty. All of the botanic drugs in common use are described, with a critical review of their therapy. The exact dose is given, how best employed and the distinctions in the use of allied drugs are gone into thoroly. While there is evident a strong note of personal predilection owing to intimate study of various galenicals, the author is fair in giving due credit to the opinions of others. Blair's book is one of the most practical, sensible and dependable yet published on the subject. It has appeared at a very opportune time. It behooves every physician who has the interests of his patient at heart to get a copy, and again become familiar with botanic drugs.

BOOKS RECEIVED.

Geriatrics—The Diseases of Old Age and Their Treatment.—By I. L. Nascher, M. D. P. Blakiston's Son & Company, Philadelphia. Price \$5.00 net.

Pharmacology and Therapeutics.—By Horatio C. Wood, Jr., M. D. Second edition. J. B. Lippincott & Company, Philadelphia. Price \$4.00.

The Operating Room.—A Primer for Pupil Nurses. By Amy Armour Smith, R. N. W. B. Saunders Company, Philadelphia. Price \$1.50 net.

The Highway of Death.—By Earl Bishop Downer, M. D. F. A. Davis Company, Philadelphia.

Blood-Pressure from the Clinical Standpoint.—By Francis Ashley Faught, M. D. Second edition, thoroly revised. W. B. Saunders Company, Philadelphia. Price \$3.25 net.

Practice of Gynecology.—By William Easterly Ashton, M. D., LL. D. Sixth edition, thoroly revised. W. B. Saunders Company, Philadelphia. Price \$6.50 net.

International Clinics.—By H. R. M. Landis, M. D. J. B. Lippincott Company, Philadelphia.

A Manual of Nervous Diseases.—By Irving J. Spear, M. D. W. B. Saunders Company, Philadelphia. Price \$2.75 net.

Clinical Gynecology.—By James C. Wood, A. M., M. D., F. A. C. S. Boericke & Tafel, Philadelphia.

A Layman's Handbook of Medicine.—By Dr. Richard C. Cabot. Published by Houghton Mifflin Company, Boston. Price \$2.00 net.

The Growth of Medicine from the Earliest Times to About 1800.—By Albert H. Buck. Yale University Press. Price \$5.00 net.

The Internal Secretions.—By E. Gley, M. D. Paul B. Hoeber, New York. Price \$2.00 net.

Cancer, Its Cause and Treatment.—By L. Duncan Bulkley, A. M., M. D. Paul B. Hoeber, New York. Price \$1.50 net.

An Adequate Diet.—By Percy G. Stiles, Ph. D. Harvard University Press.

Organism and Environment.—By John Scott Haldane, M. D. Yale University Press. Price \$1.25 net.

Occupations From Social Hygienic and Medical Points of View.—By Sir Thomas Oliver, M. A., M. D. Cambridge University Press.

The Mental Health of the School Child.—By J. E. Wallace Wallin, Ph. D. Yale University Press. Price \$2.00 net.

Diseases of Infancy and Childhood.—By Louis Fischer. F. A. Davis Co. Price \$6.50 net.

Science of Feeding Babies and Normal Care of the Growing Child.—By H. Elizabeth Gould, Rebman Co., N. Y.

Poetry and Doctors.—By Chas. L. Dana, A. M., M. D., LL. D. Elm Free Press, Woodstock, Vt.

Standards of Health Insurance.—By I. M. Rubinow. Henry Holt & Co., New York.

Feeding the Family.—By Mary Swartz Rose, Ph. D. MacMillan Co. Price \$2.10.

Education and Living.—By Randolph Bourne, Century Co., N. Y. Price \$1.25 net.

The Diary of an Expectant Mother.—A. C. McClurg & Co., Chicago. Price \$1.25.

Botanic Drugs.—Their Materia Medica, Pharmacology and Therapeutics. By Thomas S. Blair, M. D., editor Medical Council. Author of "Public Hygiene," "A Practitioner's Handbook of Materia Medica and Therapeutics," and "Pocket Therapeutics"; formerly neurologist to Harrisburg (Pa.) Hospital. Large type, fully indexed, 394 pages. Price \$2.00. Cincinnati. Therapeutic Digest Pub. Co., 1917.



Trench Foot, Its Causation and Treatment.—In their article on this subject Walker and Rideal (*Jour. of the Royal Army Med. Corps*, May, 1916) state that "trench foot" may provisionally be defined as a condition due to prolonged action of water on the skin combined with circulatory disturbance due to cold and inaction.

Water is an abnormal environment for the skin. Theoretically, there are three actions of the water: (1) Loss of heat due to increase of conductivity and thermal capacity of the surrounding medium; (2) effusion of salts from the skin; (3) infusion of water into the skin. A normal skin can, of course, resist these actions, but when the exposure is prolonged and the circulation is diminished the osmotic action may become important. This is proved by experience and by experiments. Fishermen and otter-hunters find that after several hours' contact with cold water there may be some pain, tenderness, and even swelling of the feet, lasting perhaps a day or two. Workers in paper manufactories, who have to stand for a day at a time in several inches of warm water and paper pulp, have similar symptoms. These are not entirely due to circulatory disturbance.

"Trench foot" is said to occur in cases in which water has been excluded. Experiments were made with various kinds of grease in order to find one which would be impermeable to sweat, and would thus prevent the accumulation of sweat in the sock.

For each ointment tested a control experiment was previously made on the naked hand. The average amount of sweat was three grams

per hour without ointment, and one and a half grams per hour with ointment.

It is suggested that a salted ointment such as salted lard would be beneficial in protecting the foot against water. The salt would further act as an antiseptic. A liberal amount of ointment would be necessary—*e. g.*, 100 grams for each leg, with five or ten per cent. salt.

All other practical precautions should have been taken, such as foot inspection, so as to insure the men using the ointment, provision of dry socks with the waterproof trench boots, loosening of the puttees, etc.

Officers' spiral puttees contract five to six per cent. of their length when they are soaked in water.

Hughes in his article on the same subject (*British Med. Jour.*, May 20, 1916) gives the following suggestions:

1. Keep the feet raised whenever possible so as to prevent stagnation, especially after a period of standing while on sentry-go or in a listening sap.
2. Keep the soldier fit by getting the full calorific equivalent out of his ration, thus keeping the blood-pressure up and "warding off fatigue."

If congestion has occurred, he has always detained the men at the regimental aid post for twenty-four to thirty-six hours. If a regimental aid post has not existed in the part of the line to be held, he has immediately made one, and has always been supplied with a fatigue by the commanding officer to erect it in minimum time. This dug-out will usually accommodate six to eight men, and timely massage with rest have rendered the men fit to go back to trenches in thirty-six hours. They report each day for three days for further massage, and at the end of this time, with instructions as to the keeping up of their legs whenever possible, the writer had no further trouble.

By this means many men were kept in the firing line who would otherwise have been temporarily lost to the unit, and this is a point the importance of which need not be emphasized.

Method of Plaster Splinting for the Treatment of Knee-Lesions.—This method which is described by George Davis, M. D., surgical specialist to the Military Hospital, Eastbourne (*Lancet*, London, Feb. 24, 1917) is a thigh plaster and leg plaster conjoined by three equidistant arches of hoop-iron. The points of the method are:—

1. That the interrupting supports radiate from a point in the center of the limb and resist mobility equally in all planes.
2. The iron-hoops being covered with plaster become one with the splint, and are much strengthened and much smoother, and less awkward.
3. There is quite room for dressing, however bulky. The splint can be made much more serviceable by having an extension of plaster around the pelvis—a spica.

The splint is especially suitable for all cases of resection of the knee joint. Also where the

tibia is fractured into the knee or where infection has reached the joint from a wound in the tibia. It will be most useful where fibrous ankylosis is the best prognosis permissible from the nature of the injury. Such cases often last many months, entailing intense suffering. Unless the limb is fixed without mobility a bad alignment results from muscular action, when the ligaments of the joint are softened by long-continued suppuration.

The only other splints that would occur to any surgeon in this class of cases are: The Wallace-Maybury; this is bad, since it tends to separate the opposing bony surfaces of the joint, and it allows the knee to sag at each dressing. The same remarks apply to the Thomas. Of course, the use of the Balkan splint with this splint is obviously the best treatment in conjunction with this fixing apparatus.

The splint should be very comfortable and a

pedic surgery has a very large part to play in (1) assuring physical efficiency in the ranks; (2) in conserving and restoring the function of the locomotive apparatus of the wounded; (3) in providing the physical possibility and perhaps reorganizing the means by which war cripples may become happy, productive, wage-earning citizens, instead of boastful, consuming, idle derelicts.

The important part of preventive work, namely the acquisition and maintenance of a good posture, is surely an orthopedic concern. In these days of trench warfare the feet of the soldiers are of supreme importance. Careful tests would more than compensate for the time consumed by the discovery of potential but correctable faulty weight bearing and the assurance of more constant and continuous efficiency when severe tests came. Battles may be lost or won by shoes alone.



(Photo from Underwood & Underwood, N. Y.)

MODERN GERMAN SURGERY REMADE HIS FACE.

Many wonderful and brilliant achievements have been accomplished by a combination of surgery and science in the replacing of eyes and limbs and parts of the anatomy of wounded German soldiers. One of the most remarkable of all these combinations is shown in the two photographs. The German soldier whose gallantry won the Iron Cross had the entire lower portion of his face, the chin and jaw, severed by a sabre cut. The wounded man was taken to the hospital of Dr. Warnekros and the ingenious chin and under jaw were constructed. The photo on the left shows the jaw as the sabre wound left it. The one on the right shows the remarkable chin, constructed by science and surgery.

welcome support. It should last 4 to 7 weeks, by which time further progressive emaciation of the limb may require a fresh splint to be made. The limb, splint and all, is slung from a Balkan frame. The dressings can be done with the minimum of pain, and the perfect alignment of the limb is assured. The patient can bear to have the limb handled and be moved on to a couch or spinal chair and so improve in health and spirits by being out in the open air.

It is easy to make additions to this apparatus, either of a plaster to include the foot or one to surround the pelvic girdle, or both.

The opportunities for preventive orthopedic surgery have not ceased when the base hospital is reached. The wounds of the war are nearly all infected. Healing is delayed and contractions and adhesions are almost certain to occur, unless these dangers are appreciated and future function striven for quite as strenuously as the healing of the wound.

Ankylosis, after joint injuries with their accompanying infections, is a very common and unfortunate sequela, but the degree of this misfortune depends on attention to the position in which the joint stiffens, and every joint may be said to have its position of choice.

In the writer's experience he has found plaster of Paris most adaptable for immobilizing even the septic compound fractures requiring constant irrigation.

Orthopedic Surgery in War Time.—Robert Osgood says (in *J. A. M. A.*, Aug. 5, 1916) ortho-

The importance of massage and early gentle, active and passive motion to prevent the formation of permanent adhesions is emphasized.

There are now several very excellent universal mechanotherapeutic machines, both French and German, which working on the principle of the pendulum, afford excellent opportunity for the slow but safe limbering out of joints and stretching out of muscular contractures. The results which they accomplish are slowly gained, but they may be expected to be permanent.

With septic compound fractures, in which wide gaps of bone exist, grafts are obviously not advisable until the sepsis has thoroughly disappeared, and in stiff joints all experience teaches that no attempt should be made to perform arthroplastic operations until long after the septic process has been quiescent, how long may be found to vary with different germs. Perhaps a year is not too long as a working rule.

The Treatment of Infected Suppurating War Wounds.—Rutherford Morrison, Professor of Surgery, Durham University (*Lancet*, London, Aug. 12, 1916) says wound infection has been the great surgical curse of this war. He has developed a simple method, necessitating but few dressings, by which many wounds can be sterilized at once, while in the remainder, so far as present experience goes, the spread of infection can be checked and limited.

The steps of treatment are: 1. Under an anesthetic, usually open ether, cover the wound with gauze wrung out of 1.20 carbolic acid and clean the skin and surrounding area with the same lotion. 2. Open the wound freely and if possible, sufficiently to permit of inspection of its cavity. (In doing this special regard must be paid to nerve trunks and muscular branches of nerves, since the division of blood vessels, excepting the largest, and of the muscles themselves does little harm as compared with that of the disability following nerve damage). Cleanse the cavity with dry sterile gauze, mops, Volkmann's spoon, etc., and remove all foreign bodies. 3. Mop the surrounding skin and the wound cavity with methylated spirit. Cotton-wool mops conveying the spirit are used for this purpose, and are introduced on forceps. 4. Fill up the whole wound with the following paste: Bismuth subnitrate 1 oz. by weight; iodoform 2 oz. by weight; paraffin liq. q. s. to make thick paste. Dress it with sterile gauze, and cover all with an absorbent pad, which is held in position by sticking-plaster and a bandage. This dressing requires no change for days or weeks if the patient is free from pain or constitutional disturbance. Should, however, discharge come thru the stained part must be soaked in spirit and a gauze dressing, wrung of the same, applied as a further covering.

The advantages of this treatment have been most striking in cases of compound fractures of the long bones. The rapid union which has been noticed in some of the fractures suggests that the paste may stimulate osteogenesis. In several of the exhibited cases it was noted that thick catgut sutures were used to close the

wounds made for exposing the cavity. This was employed as a test of the efficacy of the methods used, as catgut sutures offer the most definite clinical evidence of any fault in wound treatment.

Radium in Military Surgery.—Cameron, in a paper upon this subject in the *Pennsylvania Medical Journal*, arrives at the following conclusions:

1. The application of a stimulating dose of radium rays (10 to 35 milligrams of element, in tubes, from ten to twenty minutes) is the most effective agent employed up to the present time in the treatment of wounds in what may be called the subacute or chronic stage of infection. The same may also be said of non-granulating wounds.

2. By raying to the point of tissue destruction, the removal of sloughing tissue, dead bone, etc., may be facilitated.

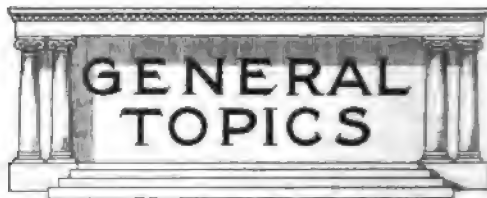
3. In raying deep sinus cases, care must be taken to place tube at bottom of sinus. If foreign body prevents, the case should not be rayed until same has been removed, unless the raying is intended to facilitate the removal of bone spicula.

4. The number of cases already reported will demonstrate that the intravenous injection of radium is void of danger. Its effect on the circulation, the clotting period of the blood, on the red and white cells, and its effect in increasing the action of other agents makes it a most valuable agent in the treatment of shock, anemia and cases presenting symptoms of general infection.

5. Altho the opportunity for using a solution containing radium element has not been very large, in the treatment of acute infected wounds, enough data has been collected to demonstrate that its use in combination with normal saline will give just enough stimulation to local circulation to bring the white cells constantly into action.

6. Radium rays have no bactericidal action, and the effect, when used locally, is due to the stimulating effect of the rays.

7. Because of the long period of time radium tubes may be employed, and the number of cases capable of being treated in twenty-four hours, we believe we have developed the most economical method of the treatment of backward wounds.



Prophylaxis Against Pediculi.—Reports from the battlefields of Europe indicate says an editorial writer in the *New York Med. Jour.* (Feb. 10, 1917) that not the least of the foes which

help to make life a burden to the soldier in the trenches are the animal parasites which feast upon him. An English physician has in fact published a monograph on the subject calling them the "Minor Horrors of War," and going into detail in regard to their habits. His work is touched here and there with humor; indeed, for some reason the subject seems to many persons to be intrinsically facetious, altho the soldiers themselves usually see the comical side of it some months after they have returned from the front.

Naturally many expedients have been tried

moved. They are unharmed by this process and the odor imparted is not disagreeable. The protection lasts, moreover, for some little time afterward, as the process leaves minute crystals of naphthalin on them and these have a prophylactic effect.

If the above method is really all the discoverer claims for it it is certainly an unmixed blessing, not only for the relief from the mechanical discomforts inseparable from the entertainment of the pediculus, but also for the protection from disease, especially typhus. Another lesson is learned from the Great War



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WITH THE ALLIES IN THE BALKAN CAMPAIGN.

After the attack. An advanced dressing station. The shack in which the wounded soldiers are being treated is continually under fire.

to rid armies of this pest. The rigid cleanliness which excludes it from civilians and their households is not possible, of course, at the front, and instead dependence must be placed on chemical agents to destroy the invaders or to prevent the invasion. Many of these chemicals have been found impracticable on account of unpleasant physical characteristics, but an Italian physician has lately reported one which he claims is free from these disadvantages.

Dr. Alfonso Muto, in an Italian periodical (*Annali d'Igiene*, August 31, 1916) advises a ten per cent. solution of creolin as the ideal chemical agent for this purpose. The clothing to be treated is placed in a wardrobe, the interior of which is connected by a pipe with a boiler containing the creolin solution, which is then boiled, the vapor permeates the wardrobe for about fifteen minutes and is then turned off; a quarter of an hour later the clothes are re-

which will be noted by the military surgeons of America, to be applied in case of need.

25,000 Medical Men Needed.—Not fewer than 25,000 medical men of all classes will be required for service in the event of a long war, according to the estimates of military authorities. Opportunities for service in the Red Cross are described in a section given over to that subject in the Columbia University booklet.

"Graduates of recognized medical, dental or veterinary schools who apply for commissions in the Reserve Corps will not be examined or marked on general education," it says. "At the discretion of the surgeon general examinations such as to determine the applicants' physical and professional fitness for the war service will be given. There are no age limits to this serv-

ice, except that applicants over sixty must show cause for their acceptance.

"All applicants must be physically fit. Special Regulations No. 43, War Department, March 29, 1917, supersede all other regulations. Copies may be obtained from Governor's Island, New York City, or the Adjutant's Office, Washington. If you are in doubt as to what to do, get in touch with the medical school or the hospital where you were trained. Inquiries may be addressed to Major H. C. Coe, Academy of Medicine, 17 West Forty-Third Street, New York City. Hours, 3 to 5 daily, except Saturday and Sunday.

"Hospital units are already established at the following hospitals in New York City: Presbyterian, Dr. Brewer; New York, Dr. Charles Gibson; Bellevue, Dr. George Stewart; Roosevelt, Dr. Charles Peck; Post-Graduate, Dr. Samuel Lloyd; Polyclinic, Dr. John Wyeth; German, Dr. Frederick Kammer; Lebanon Hospital, and St. Luke's, Dr. H. H. M. Lyle.

"These units are under the Red Cross and need ambulance drivers, cooks, ward men, quartermasters and some engineers. Lectures are given on Thursdays at 5 p. m. by Major Philip Huntington at Cornell Medical College.

"Physicians, graduates of a reputable medical school, between the ages of twenty-one and thirty-two, may apply for examination for a provisional commission in the Medical Corps of the United States navy. If this and a physical examination are successfully passed, a four months' course at the Naval Medical School, Washington, is required, and, if successfully completed, the applicant may be commissioned in the Medical Corps. The same provision is made for army service, save that the course in the Army Medical School is of eight months' duration. Detailed regulations are given in Navy N., November, 364, 1917; Army, Form 132, Revised August 17, 1916. About 350 men are needed for the regular Army Medical Corps and about fifty for the regular navy service.

"If you have ability in chemical, clinical, pathological or bacteriological work useful in the medical service, get in touch with the officials of the laboratory where you were trained. For the bacteriological service Dr. Hans Zinsser, College of Physicians and Surgeons, Fifty-Ninth Street, New York City, may be addressed.

"Dentists continuing at their practice have been organized into the Preparedness League of American Dentists, with a membership of 20,000. They have offered to repair the teeth of prospective recruits free of charge. This is a most important service, for many applicants are rejected because of defective teeth.

"Medical students are strongly urged by the Federal authorities to continue in the study of their profession so that they may be adequately trained to take the places of those needed for war duty. Vacation service as Red Cross instructors or in laboratories is suggested."

Army has made the whole world a debtor says the *Journal Michigan State Medical Society*. It was an army surgeon who slew the hookworm in Porto Rico; it was an army man who fought to the death with yellow fever in Havana and conquered it; it was an army man who made the disease-breeding swamps of Panama into a zone of health; it was an army man who perfected camp sanitation and disease prevention during mobilization. And so one might continue to enumerate the world-wide influence that has followed the studies and discoveries of the men now enrolled in the medical department of our army. Noble, whole-hearted, thinking not of or for themselves, but for their country and country's good. We may well be proud of our professional brothers thus serving our country. Small tho the credit awarded them, great and enduring are these, their achievements.

Military Surgery Clinic at the Rockefeller Institute.—It is reported says the *Medical Record* that a portable military hospital unit will at once be constructed and equipped on the grounds of the Rockefeller Institute in New York. The hospital will have accommodations for 200 patients, and it will be used as a clinic of military surgery under Drs. Carrell and Dakin. Among other things will be demonstrated the method of antisepsis introduced by these surgeons in the French military hospitals. The objects of the clinics are stated to be as follows: (1) To make available to patients the improved method of treatment. (2) To demonstrate and teach to American surgeons, who may be enrolled for military service, measures for the treatment of infected wounds. (3) To test the feasibility of a portable military hospital unit.

British Relief in America.—The British War Relief Association of America, was established for the purpose of assisting to supply the needs of wounded soldiers in England, France and Belgium. The special efforts of the association are being directed to providing surgical dressings for the wounds of the soldiers. These dressings are cut, folded and prepared for use by friends at the headquarters of the association which occupies an entire floor in a lofty building at 542 Fifth Avenue. Ladies work here all day and every day cutting surgical dressings. They also collect and despatch comforts of every kind, from motor ambulances to antiseptic pads. Already over 1,500 packing cases, five motor ambulances and one motor car have been sent away and cases are being shipped each week.

The association has been doing splendid work but could go much further if more funds were forthcoming. The association appeals for donations and we know of no cause more worthy of help.

It may be said that all supplies are purchased in this country and that checks may be made payable to British War Relief Association, Inc., 542 Fifth Avenue.

The Whole World Debtor to U. S. Army Surgeons.—The Medical Department of our

American Medicine

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In Advance

The National Research Council.—Warfare presents numerous problems which have not been foreseen. It constantly challenges the inventive genius of the age to produce guns of larger caliber, shells of higher velocity and greater force, ammunition with increased destructive power. It encourages new plans for offensive and defensive attack. It hurls question marks to the belligerents and stimulates their brains and energies into rapid action.

Many of the difficulties during war are merely the intensification of similar problems which are being solved during peaceful years. There is demand for haste. An emergency arises. A serious situation imperatively calls for prompt relief. If there is no answer to the call for scientific assistance a battle may be lost, a nation overcome.

In this country there is already a body of capable scientists grappling with war problems of all kinds, but especially with a view to improving hygienic conditions in the army and navy. They are seeking to safeguard the nation as well as the combatants from the direct and indirect effects of martial service.

Victor Vaughan, in *The Journal of Laboratory and Clinical Medicine*, May 1917, epitomizes the fields of activity which are to claim the interest of the National Research Council. The study of antitoxins and vac-

cines, of drinking water, rations, clothing, the care of excreta, the treatment of infected wounds and the ability to hasten the healing of wounds have a familiar sound. Shock, first-aid dressings, the examination of recruits, and dressing stations are natural subjects for military investigation. Poisonous gases, antivermin crusades, the fly pest, the control of venereal diseases, the protection of the ear from the noises of battle, the prevention of fatigue, the disinfection of transports for the wounded suggest a variety of topics whose investigation will tax the skill of our educational institutions, research laboratories and industrial organizations.

While there has been a varied literature upon these subjects there is a marked necessity for collating the main facts and presenting them to the medical forces of the nation. The United States has been far removed from the scenes of actual conflict and the realities of war have scarcely begun to manifest themselves. The realization that actual experience in many of the lines above mentioned has been inadequate has sufficed to arouse a deep interest in their investigations.

The sum total of the additions to the world's knowledge arising out of war difficulties has not been as large as might have been expected. Practical medicine and surgery have made moderate gains but have

not been materially enriched. The most satisfactory results have been attained in hygiene and dietetics because of the grim necessity of maintaining the efficiency of the fighting and the working forces. Even this impetus has failed in accomplishing the protection of belligerent nations.

The United States has begun to feel the necessity of rapid strides in preparation against the enemies that arise from transposing the country from a state of peace to a state of war. Every physical and mental force in the community is being coordinated to present the strongest front to the foes of national welfare. The medical officer in the field has serious duties to perform, but his ability to cope with the tremendous problems of active service is largely dependent upon the enthusiastic support of his colleagues striving to make conquests in the laboratory. The horrors of warfare have originated in the laboratory. They represent the output of scientific brains. Desolation is a scientific production.

The secrets of life saving are being wrested from reticent Nature by skillful biologists, bacteriologists, physicians, surgeons, physiologists and hygienists patiently toiling with the microscope and test-tube, the thermometer and hypodermic needle, the stethoscope and etherizing cone. Progress is painfully slow but the triumphs achieved are lasting. Science fights science. The armies of conservation oppose the forces of destruction. The contest is waged with enthusiasm and vital interest. The blood of humanity is the prize. Nations with labored, wearied breath watch anxiously, ever ready to cheer the victor.

The National Research Council is prepared for the battle. Its endeavors un-

doubtedly will reflect credit upon all scientists. It is a matter of professional pride and satisfaction that the medical profession is to play a prominent part in fighting the scientific battles of the country. Its tactical problems have been formulated. Investigations are now under way. The results are awaited with hopefulness and expectant confidence in its strategic judgment and constructive alignment.

Credulity in the Medical Profession.—

In an ideal state of society, all individuals being absolutely credible, all would also naturally be credulous—in a good sense. One of man's earliest means of defence, however, against his enemies, the higher animal as well as the lower, was deceit. Such means of defense exist thruout Nature, as instanced in the protective coloring manifest in organisms as far apart as the beetle and the zebra. As man has increased in intelligence and mental capacity, far from casting aside his talent for deception, he has perfected it along with other qualities useful in the struggle for existence, and it is hardly too much to say that men who have risen to eminence along lines where competition is rife, as in war and finance, have been distinguished for their ability to deceive their adversaries as to their plans for attack, and for their ingenuity in luring the enemy into ambushes where all looked fair and innocent. The great rewards, indeed, honor, preferment, and financial success have been conferred thruout history on men whose real talent was nothing more than a highly developed instinct for self preservation, an end which they have cunningly forwarded by heaping about themselves the

well nigh impenetrable intrenchments of great hoards of money.

At the opposite pole of this highly successful acquisitive type of mind is that of the scientist, medical or otherwise. There is some quality bound up in the indefatigable searcher for the naked truth which not only apparently prevents him from taking due care of his own future, but renders him peculiarly susceptible to the wiles and the lies of others. Where he is unable to hand over money, he will at least lend his name and his prestige to an oily tongued rascal. Members of our profession are notoriously easy dupes for land speculators, Mexican mine and orchard exploiters, and financiers who promise five hundred per cent—while you wait. For the fraudulent exploiter of premature remedies physicians have made fortune after fortune, turning away their own patients in the process.

Alive to this amiable peculiarity of some physicians, daring promoters have repeatedly "put over" schemes of impudence and magnitude. Apart from a few unimportant hangers-on of the profession, it is often the most distinguished from the purely scientific viewpoint who lend themselves to the exploitation of various schemes and products. All over the country men of eminence have not infrequently covered themselves and their colleagues with confusion by their unsuspecting acceptance of the bold claims of the pseudo-therapeutists. Were it not for the terrible results in bankrupted families, in perished hopes, in the ruthless pillaging of the already well nigh empty purses of chronic sufferers, there would be actually something captivating in this innocent credulity on the part of the laboratory and clinical scientist. In a world filled with greedy and unscrupulous mer-

chants, who have long since ceased to take anything on trust, and who discount promises—and paper—on principle, an uncorrupted mind shines by contrast with a gentle and holy glow. The unquestioned acceptance of statements is characteristic of a mind isolated in scientific pursuits from contact with the world, and there is something really fine in the man who, playing the game himself with all his cards on the table, obviously expects that all others will be equally frank. In many respects this is the best of all mental types; but two thousand years ago it was found necessary to warn men of this very kind, that as they were to be sent forth in the midst of wolves, they must therefore be wise as serpents as well as harmless as doves. Where credulity on the part of a physician is to be paid for only by his personal losses, perhaps we can do nothing; but where are imperiled the welfare and future of thousands of patients, the majority of them in worse than moderate circumstances, we ought to be able to devise some means of safeguarding the priests of our inner sanctuaries from the invasion of glib and unscrupulous promoters or salesmen.

Poliomyelitis.—The widespread epidemic of poliomyelitis which scourged various sections of the country last summer involved many interesting problems of isolation, quarantine, hospitalization, treatment, and travel certificates.

While the general history of epidemics tends to indicate that there is little prospect of a recurrence of the epidemic in communities which suffered during 1916, there is every reason to believe that the errors of

administrative judgment of the past season would not be repeated if there should be a repetition of the epidemic during the coming summer.

The Conference of State and Provincial Boards of Health of North America adopted a report in May, 1917, which suggested the minimum requirements for the control of this disease. There is a general sanity in the recommendations which represent the mature deliberation of those who have studied the subject with the utmost calmness and scientific consideration. They recommend that the isolation period for patients be not less than two weeks nor more than three weeks from the onset unless the temperature has not returned to normal within this period. Children in the same household in contact with a patient are to be restricted from places of public assembly for a period of two weeks from the last date of contact. With the proper isolation of the patient, the adults of the household may pursue their vocations provided such vocations do not bring them into contact with children.

The Committee approves of removal to hospitals only when proper isolation and adequate home care cannot be secured. They also believe that transfer to a hospital may be detrimental to the welfare of the patient during the early stage of the disease when rest in bed is of paramount importance.

It is interesting, in view of the great excitement of last summer, to note that the use of travel certificates is not recommended and that surveillance of persons coming from infected districts is unnecessary unless there is a definite history of exposure to infection.

Considering the great agitation in September as to whether or not schools should

be reopened, there is considerable encouragement in the advice that when poliomyelitis breaks out in a school, the school should not be closed but that daily medical supervision should be instituted.

Had these various recommendations been recognized as valuable during 1916, there would have been a marked decrease in the general hysteria and a lessening of personal discomfort on the part of those interested in travel, education, or indeed the control of the epidemic. It is true that the general store of medical knowledge was not greatly enriched by virtue of the experience with the epidemic but at least a strong effort was made to establish a reasonable basis for meeting any future epidemics of the same nature. The most effective agency in the control of this disease appears to be home education, which is to be secured thru the employment of public health nurses and physicians employed by the municipality who can give the essential instruction in hygiene required.

Until further information is at hand with reference to the detection and elimination of carriers or indeed until positive knowledge exists as to the methods whereby the infection is spread, our health officers will be hampered in the efficient performance of their functions. Meanwhile calmness and reason have an opportunity to counteract the vague impulsiveness of conscientious officials who in turn can prevent the unreasoning and unreasonable demands of an over-excited population. The feeble results of a summer's disorganized efforts, or possibly a summer of organized confusion, point out the necessity of accepting the judgment of the Conference referred to. The minimum requirements recommended are reasonable and sound. There is little

reason to make the maximum requirements as strict, rigid and severe as those which were employed during 1916.

Industrial Prophylaxis.—The prevention of pestilence among soldiers and sailors is recognized in every plan for maintaining the efficiency of the military and naval forces. During recent years tremendous strides have been taken in the direction of protecting industrial workers from preventable sickness and injury. For two centuries there has been accumulating a noteworthy literature indicating the relationship between industrial environment and the conditions of factory life to the development of disease and injury among employees. During the past three years attention has been focused upon this subject from various angles in order to establish with definiteness the degree of association between industrial morbidity and mortality and unfavorable conditions of labor. Numerous memoranda have been issued by the British Health of Munition Workers Committee which was appointed in September, 1915, "to consider and advise on questions of industrial fatigue, hours of labor and other matters affecting the personal health and efficiency of workers and munition factories and work-shops." The United States Department of Labor has edited the reports of this committee and has presented them in three bulletins at the request of the Council on National Defence.

It is desirable that the United States should take advantage of the experiences of foreign nations in dealing with matters of industry and health as affected by war conditions. The desire to secure a tremendous

output of munitions and supplies in the shortest space of time tends to short-circuit consideration of the effects of such strenuous efforts upon the workers. To rush madly into a campaign without making adequate provision for the welfare of soldiers would be deemed absolute rashness and dangerous temerity. Similarly to oblige the industrial system to work on forced draft without investigating the factors of safety is an evidence of a lack of discernment and poor judgment. It is unnecessary for this country to repeat the errors of friends and foes.

If excessively long hours of work, particularly by night, produce fatigue, irritation and sickness, such conditions must be corrected. If continued cramped attitudes decrease the vitality of the heart and lungs, these can be avoided. If prolonged or excessive muscular strains increase the liability to hernia and varicose veins, proper precautions may obviate them. If insufficient ventilation in work-shops and factories decreases individual energy, undermines physical strength, and increases the predisposition to disease, the facts are too significant to be disregarded. If working in the presence of poisonous gases, vapors and irritating dusts leads to actual intoxication, adequate provision must be made to eliminate the conditions productive of such dire results. If the manufacture or handling of high explosives is singularly hazardous, special provision must be made for the sanitation of the munition factory and the maintenance of hygienic conditions for the workers.

A general remedial system must be instituted which will deal with the prevention of disease and the treatment of illnesses in their incipency. A comprehensive

plan will probably require Government authority in order to be successful. Medical examination of workers is a pre-requisite, to which must be added industrial clinics, frequent re-examinations, and adjustment of occupation hours and time of service. The factories must reduce to a minimum the conditions prejudicial to health. A sanitary plant must be provided, hours of labor limited, adequate heat, lighting and ventilation must be secured. The attendance of physicians and nurses in large factories is essential, together with a social worker to link up the hygienic and living conditions in the homes with the necessities of industrial welfare.

Despite the most perfect regulations, the guarding of machinery, and the adoption of safety appliances, accidents will occur. Hence, in addition to rigid factory inspection, there must be developed an elaborate system for the prompt treatment of minor injuries by technically equipped individuals in well organized first aid stations.

It is important that a full and accurate registration be made of all cases of sickness and accident, with a record of the first-aid treatment, the number of dressings, the general line of treatment, the date of injury, the nature of the injury and its cause, its course under treatment, the date of discharge of the patient, and his conditions at discharge. Based upon this data and a re-examination, it is possible to determine the nature of the work for which the workman is fitted so that he may not re-enter a process room in which the inherent danger is such as to cause a prompt recurrence of the disease, or in which unfavorable conditions may conduce to another accident.

Undoubtedly a number of special industrial diseases will call for attention by men

thoroly unacquainted with their symptomatology and treatment. For this reason special training should be afforded in the management of industrial diseases and poisonings to the group of physicians who may be called upon to serve officially as medical officers in charge of munition factories.

The necessity of educating employees in their duties and responsibilities for the maintenance of healthful conditions, and indeed for their own personal welfare, cannot be exaggerated. Each industrial establishment should maintain a school of personal and industrial hygiene particularly as related to its own type of work. This need not be regarded by employers as a costly humanitarian project because it is a simple problem in business arithmetic, the solution of which will demonstrate that protecting the health and lives of workers pays in terms of factory organization and output.

The large factory must become a prophylactic power. The commercial, medical and hygienic elements in society will become allied in the development of a rational plan for securing the maximum output of requisite materials with the minimum sacrifice of the strength and vitality of the workers.

American Medical Men.—June is the month of brides and also the month given over to the evidences of the devotion of physicians wedded to their profession. The recent meetings of the American Medical Association, the American Academy of Medicine, the American Medical Editors' Association and numerous other medical organizations were well attended, enthusiastic in discussion, and generally helpful to the medical profession.

Large conferences of medical men are more than mere meetings for medical discussion. They represent sessions of interested and thoughtful individuals upon matters pertaining to the health and welfare of communities. The meeting of the American Medical Association is national in its scope and its proceedings are international in value. Medicine knows no nation, creed, or social stratification. The problems of health and the problems of disease are universal in their application. The meeting of this national organization is of public interest and concern, and its judgments, resolutions, and reports possess the widest significance for the nation.

The presence of physicians attired in military uniforms added a touch of color, somber, but hopeful, to the convention. It was a new vision of medical duty—the direct practice of the principles of national service for which the profession has always stood firmly. It is the beginning of a time when the wearers of the country's uniform will be a common sight at every large gathering.

The profession as a whole is now on trial; its character is being scrutinized; its sincerity is being questioned; its devotion is being put to a real test. The medical forces of the allied armies are depleted. Their forces of health are seriously broken and the groans and patient moanings of those fallen in the cruellest fray in the world's history are borne across the Atlantic to our ears. All human sympathy is awakened. A consciousness of duty is aroused. Is the cry for medical assistance to be answered? Will the medical profession of the United States be as quick as that of Great Britain and France to respond to the needs of the hour? Is it as alive to its duties and obligations?

During the meetings at New York there were numerous references to the serious state of affairs which exists for all armies. The United States is seeking to build up a tremendous military force, for the care and conservation of which many thousands of physicians will be required. This country possesses more physicians in proportion to population than any other nation on earth. With little interference with the health work this country can supply a large and ample number of physicians for national service. The call has been issued. Thus far the response has been sadly inadequate.

Are many physicians lacking in national spirit? The appalling number of young doctors who have asked for exemption is a sad commentary upon their patriotism. When the problem of war was still undecided, medical men had pronounced views as to the importance of medical service in connection with the organization of a national army. They have freely criticized the Government for past failures in making satisfactory provision for the health of soldiers; they have vigorously condemned inactivity, favoritism, and inefficient methods, resulting in unhygienic conditions in the camps, the barracks, and the field.

The Medical Reserve Corps must have its numbers increased. Are the erstwhile critics willing to do the things they asserted they would or could do?

Sir Alfred Keogh, Surgeon General of the British Army, has emphasized the fact that the most vital need of a modern army is doctors. The British Army possesses about twelve thousand doctors for its large force of five million men but this is totally inadequate for the necessities of war service. To recruit, examine, and train our one

million men will require at the very least ten thousand doctors, and this is practically only seven per cent. of the medical men in the United States.

While giving every credit to the many loyal, patriotic men—leaders in the profession—who have already volunteered for military service, either directly with the army, or in connection with numerous Red Cross units, there can be no lack of propriety in calling attention to the astonishingly weak response that has been made thus far by the younger members of the profession in this national emergency. The Medical Reserve Corps must be enlarged. The great land and sea forces in process of organization must receive the protection which is their due from their fellow citizens engaged in medicine and surgery. The young men in medicine must be startled from their lethargy, and, if a rude awakening is essential to stimulate their dulled sense of duty, the Government will have to take such steps as may be necessary to secure a sufficient number of them to satisfy its needs.

The American Medical Association has appointed a committee to confer with President Wilson with a view to making provisions that the Surgeon Generals of the Army, Navy and Public Health Service may have the power to employ measures necessary to obtain physicians in numbers sufficient to cope with the medical needs of our country's military and naval program, and that of the nation's allies.

The fact that doctors were the first to carry the flag officially across the dangerous Atlantic is an index of our message to humanity. The first large ambulance units, however, did not represent the rank and file of the profession. They consisted largely of

medical men of note who, with a sense of profound obligation, are living up to their convictions of patriotic duty. The enlistments for military service strongly indicate that the older men in the profession recognize the urgency of the situation as well as the importance of setting an example to their younger colleagues. A considerable number of men of 40 or over have volunteered their services, but the proportion of men below the age of 35 is disgracefully small. This fact is sure to reflect discredit upon the younger group, who are thus failing to live up to their responsibilities, either as American physicians or as American citizens.

The day of awakening is at hand. What are we going to do? Are we justified in claiming exemption—except in extreme circumstances—from the service of the country that has granted us protection during the past? Are we American citizens; true American physicians; faithful servants of humanity? Or are we ingrates; slackers? For those with legitimate reasons for failing to answer the first call, no word of criticism is deserved. There are many anxious and willing to serve whose offers are properly rejected, because an equally great service is being performed by them in other lines. Many are physically incapacitated or over age, many have dependents to care for, or are responsible for the management of important enterprises adding to the welfare of the country. They may be excused with honor. Their reasons are acceptable. In fulfilling their immediate duties to the best of their ability, they are proving themselves honest, loyal patriots.

It is unfortunate, to be sure, that the Medical Reserve Corps in its original form

was submitted to so much political jugglery. In the early days this laudable movement was prostituted to questionable purposes and instead of being organized, as it should have been, to strengthen and prepare the medical agencies of the country for any eventualities that might arise, it was used to serve the purely selfish motives of those vested with the power of appointment. Instead of organizing the young medical men of the country in an effective reserve, the appointments were given to the older men who had political power or influence. Not a few of those made lieutenants in the Medical Reserve Corps were so aged or infirm that they could not possibly give any actual service. The younger, physically sound physicians, who could have been developed into good medical officers, were ignored.

Is it any wonder that the Medical Reserve Corps has been looked on with suspicion? In justice to the present Surgeon-General and those now in authority it should be said that they had nothing to do with the above unfortunate conditions. In fact, under the present regime, the Medical Reserve Corps has been reorganized and placed on a sound and efficient basis.

Justice, reason, and consideration now characterize the Medical Reserve Corps. Every man is being made to feel that merit alone counts—that he has a part to play, and only by playing it during these days of strife can he gain honor, credit and advancement.

The recent graduates of our medical schools who have had service in our hospitals, and who have recently entered upon the practice of medicine are in the public eye. Have they deferred volunteering because of sordid reasons? If so, they are

unfit to be regarded as sons of Esculapius and Hygiea. They should realize that their motives for failing to enlist with alacrity are under suspicion. War calls for youth, endurance, enthusiasm, technical ability, vision, ideals. Have our universities and hospitals developed strong, capable medical men, or have they produced spineless weaklings? The answer of the young physicians of the country is awaited with unusual interest as an index of their real character and courage.

Must those of the medical profession who should be the first to offer their services be conscripted to insure adequate medical care for those who are offering their lives to save our country? God forbid that the day will ever come when any medical man must be forced to do his duty.

The Shortage of Nurses.—Among the difficulties which must be faced as a result of military necessities is the tremendous shortage of nurses which is gradually making itself manifest. Previous to the declaration of war there was no surplus in the nursing forces of this country. The growing demand for nurses in the employ of states, municipalities, townships and villages in district nursing, in schools, in mercantile establishments, in public health work of various kinds, severely taxed the resources of nurses' training schools. The legitimate and helpful raising of nursing standards checks the entrance of undesirables into this most helpful profession.

The exodus has begun. Large numbers of patriotic women of the highest character and ability have gone and others are enlisting in the cooperative service designed

to combat the disabilities and diseases of modern warfare. As a natural result the civil population in hospitals and in homes is slowly losing the benefits of a valuable corps of technically trained nurses. The effect of this decrease has not been wholly appreciated. Unless steps are immediately taken to train a new group in the community to replace those who have gone, there will be a tremendous handicap in the development of the medical and social work of the country. This state of affairs is too serious to permit of inactivity or the postponement of constructive remedies.

Hospitals and training schools are confronted with an important problem for which they have always accepted responsibility. If the war is to continue for a long period of time and this must be the foresighted assumption, it will be necessary to develop a new corps of workers. It is essential that intelligent men and women be given an opportunity to secure a practical training in nursing with certain minimum requirements in the theory of nursing so that they may take the places in the wards and dispensaries of those called to foreign service. The American Red Cross has established as its criterion of usefulness complete hospital training. It is probable that this standard is higher than is actually necessary for effective work in times of stress and emergency. There are many women who for one reason or another have failed to complete their course of training, but who are of good character, capable of general nursing, and anxious to rally to the colors for work along this line. It would be wisdom to consider these individual applications and to utilize as far as may be possible all those desirous of participating in this form of national service.

First-aid courses are not as important, considered as a unit, as the particular training essential to develop the sense of responsibility and the willingness to carry out instructions, together with definite information as to nursing technic, dietetics, and the physical care of patients. Some with special interests may well be trained as laboratory workers for clinical examinations, anesthetists, operating room nurses, and in other specific duties where a vast amount of theoretical knowledge is entirely superfluous.

It is necessary to call into existence a mobile educational corps which can organize, supervise and direct a huge educational plan for the purpose of creating a new type of effective practical nurse who will be as superior to the old practical nurses as is the modern physician to his colleagues of two generations ago. The difference is only that of equipment in terms of modern knowledge; the spirit is the same; the ideals are identical.

It is possible to gather together large groups of enthusiastic, intelligent and willing persons, anxious to acquire specific training for nursing service. If such individuals can be encouraged to enlist in a nursing army and receive careful instruction and training, conditioned upon the agreement to give service for a definite period of time after its completion, there would be a rich reward to the community for the time and labor thus expended. The hospitals and the medical staff connected therewith should be deeply concerned in maintaining the efficiency of their institutions and the effectiveness of medical treatment which is dependent upon proper nursing. A step in advance will be taken when definite programs are instituted to remedy

the defects in nursing service which will grow more patent as the months pass by.

Venereal Prophylaxis.—A knowledge of the cause of a disease is essential to preventive work of the most thoro character. Familiarity with modes of transmission may serve as an effective basis for systematic prophylactic activity, and frequently suffices to hold pestilence in check, altho the etiological factor is unknown. It is generally assumed that when both the cause and method of disease transmission are common knowledge, control is easily achieved. As a brilliant example of the fallaciousness of this point of view the venereal diseases continue to constitute a serious problem.

In *Social Hygiene*, April, 1917, Ravenel presents a fair resumé of the theories and views accepted upon the subject of prevention of venereal diseases. The perplexing nature of the problems relating to venereal diseases is recognized. A frank consideration of the results thus far achieved in venereal prophylaxis warrants a pessimistic frame of mind which, as Ravenel suggests, will stimulate the sincere and intelligent worker to increased effort and more profound study of the methods to be employed in coordinating all the forces working for the elimination of the Black Plagues.

Dispensaries are certainly vital in the treatment of venereal diseases with a view to decreasing the number of itinerant infecting foci. The results thus far attained in the treatment of gonorrhea by dispensary methods are exceedingly unsatisfactory. From reliable figures it is patent that the percentage of gonorrheics cured is far

from encouraging. Less than fifteen per cent. are tabulated as cured at discharge, while fully seventy-five per cent. discontinue treatment in an unimproved condition. The time, cost and effort devoted in dispensaries to the treatment of venereal diseases are scarcely warranted on the basis of effectiveness of results. The limitations of the dispensary treatment appear to warrant thoro investigation. Radical changes are necessary to retain under medical supervision and active treatment those, who now fail to recognize the importance of being cured and therefore pass out of the hands of the dispensaries after a very few visits.

Anthrax, an Occupational Disease.—

The average medical student is taught that anthrax is a communicable disease which may manifest itself as malignant pustule, malignant edema, pulmonary anthrax or an anthrax of the gastro-intestinal tract. Information may be given him as to the characteristics of the infecting bacilli, the resisting power of their spores, while the medical and surgical treatment receive probably adequate attention. Rarely, however, has a medical student had an opportunity of seeing for himself patients afflicted with the disease, of observing its clinical course, or of familiarizing himself with its objective symptoms.

During 1915 and 1916 a sudden increase in the number of deaths from anthrax in the United States attracted attention to its seriousness and its extent in the United States. While anthrax has long been recognized as a disease transmitted to man from cattle and sheep, its frequent occurrence as an occupational disease had not been appreciated up to a few years ago.

Persons who handle infected animals naturally may contract the infection by immediate contact, but the groups of persons who handle materials derived from infected animals, are also subjected to the hazard of this disease. Workers in wool, hides, leather goods, bristles and hair, obviously are exposed to anthrax, while long-shoremen, porters and day-laborers engaged in transporting such materials used in manufacture are similarly in danger of becoming infected by the contact.

According to Bulletin Number 205 of the United States Bureau of Labor Statistics there is one death from anthrax recorded for every five deaths from lead poisoning. The total number of anthrax infections is approximately five times the number of fatalities.

Industrial anthrax in Europe has been attacked vigorously and the leading Governments abroad many years ago provided rules and regulations for the strict enforcement of sanitary regulations for all industries regarded as dangerous, in so far as anthrax was concerned. The methods of disinfection of hides and hair have been carefully studied and sanitary duties have been defined for all persons employed in any establishment involving the handling of dry or salted hides, sorting, washing, combing and carding wool, and goat, camel and horse's hair. Hygienic measures have been codified and advocated to safeguard the health and welfare of employees working at any process with an inherent anthrax hazard.

It is astonishing that the United States has given the problem comparatively little consideration, altho in twenty-four states legislation has been enacted making anthrax

a reportable disease. A few states require it to be reported to the State Department of Health as an occupational disease. American legislation is particularly weak in the field of prevention. In the absence of compelling regulations few employers have of their own initiative instituted the measures necessary to protect their employees. On the other hand, where wise and humane employers have posted regulations and given instructions as to the proper precautionary measures, the workers have been lax, indifferent, or defiantly negligent.

It is high time that state factory laws were formulated and workable regulations established and insisted upon in an attempt to decrease the prevalence of this disease whose average mortality is 20 percent. of its incidence. In January, 1917, there became effective an administrative order of the Federal Departments of the Treasury and Agriculture which "prohibits the importation of hides, hoofs, wool hair, or other products from animals affected with anthrax and establishes detailed requirements for the disinfection of these products if imported from districts where anthrax is prevalent and for the disinfection of conveyances and of certain premises." This order is supplemented in New York State by a recommendation of the Division of Industrial Hygiene of the State Industrial Commission which suggested and issued instructions for physicians, employers and employees. The real purpose was to secure the complete reporting of cases of anthrax and to link up the physicians to industrial establishments dealing in articles liable to be infected with anthrax.

Sufficient time has not yet elapsed to in-

dicade the results of these rational procedures. They indicate standards which might well be recognized by state departments of health thruout the country in urging upon legislatures the importance of anthrax as a communicable, contagious and infectious disease.

The discovery of the anthrax bacillus by Koch represents in a way the birth of the modern science of bacteriology. Despite the forty years that have passed little advance has been made in this country in the diagnosis or treatment of its ravages. It is probable that greater progress can be made on the side of prophylaxis than in any other phase of the anthrax problem. It is fundamental, however, that the general public be impressed with the seriousness of the disease and be educated concerning its relations to industrial welfare. Compulsory notification is only one step in the solution of the problem, tho it indicates where the disease is flourishing and the degree to which the necessity for legislation exists. State enactments are imperative to place the prevention of anthrax upon a practical and enforcible basis. It required many years to secure the passage of the Esch bill which protected workers from phosphorus poisoning and the mutilating "phossy jaw."

Judging from this and similar experiences in securing social legislation, some time will pass before all the states succeed in placing upon the statute books the numerous laws necessary to reduce anthrax morbidity.

Here again is an opportunity for state medical societies to utilize their knowledge and power in behalf of public health. The weight of medical opinion and the support of organized medicine should be focused upon problems of this type. Medical men have not awakened to their unusual opportunities in promoting health legislation.



Sanitary Drinking Fountains.—Drinking fountains have been generally introduced for the purpose of eliminating the inherent dangers of infection from the common drinking cup. Little attention has been paid to the general construction of drinking fountains, but there has been a general assumption that their sanitary condition is perfectly satisfactory.

H. A. Whittaker, *Public Health Reports*, May 11, 1917, reports a study of the mechanical features of different types of drinking fountains, with his findings of the bacteriological examinations of the parts of the fountain exposed to the lips of the drinker, together with similar examinations of the water supplied to and discharged from the fountain. Fifteen types of so-called sanitary drinking fountains were investigated. A large proportion of the fountains were found to be infected with streptococci which probably came from the mouths of the drinkers, inasmuch as the water supplied to the fountains had not contained these organisms. The streptococci were actually found in the water discharged from the fountains and thus could be transmitted to the mouths of more careful drinkers whose lips would not come in contact with the infected tips from whence the water issues.

It is obvious that drinking fountains must be constructed so that it is impossible for the consumer to place his lips upon the nozzle of the fountain. The point of discharge should be so arranged that a vertical stream is impossible. With the water issuing from the nozzle at an angle it is possible for the consumer to drink without bringing his lips in contact with the fountain tip and it is impossible for the water touching the mouth and lips to fall back upon the nozzle.

The fact that 80% of the fountains gave positive streptococci returns indicates that drinking fountains, as at present construct-

ed, are not thoroly sanitary and may serve as a factor in the dissemination of communicable diseases.

A false feeling of security disarms suspicion. The belief that all bubbling fountains are safe is apparently unfounded. It is of importance that more attention be paid to the construction of these sanitary devices in order to eliminate the possibility of infection by bacteria having their origin in the mouths of luetics, diphtheria carriers, or those carrying germs productive of pneumonia, tonsillitis, or septic sore throat.

The assumption that mechanical devices are sanitarly effective because they aim to obviate unhygienic conditions is again shown to be untrustworthy. The principle of laboratory control of effectiveness is sound. On the basis of bacteriological investigation, attention is now called to an inherent danger in drinking fountains which should be corrected, particularly in institutions, such as public schools, orphan asylums, hospitals, comfort stations, and public buildings.

Irregulars in War Service.—In the formation of an efficient body of men to take care of soldiers, what part is to be played by the Christian Scientists, the osteopaths, chiropractors, the naturopaths and numerous other cults which flourish during times of peace? The freedom with which laws are made granting privileges to a large variety of irregular practitioners would make it seem reasonable to give them an opportunity to demonstrate their usefulness in camp and field as the basis of determining their actual service to the community.

Were it not for a feeling of responsibility towards the soldiers, one would advocate for scientific reasons setting aside parallel wards for the treatment of meningitis, typhoid fever, venereal diseases and tuberculosis, not to mention the surgical conditions of hernia, appendicitis and general wounds and infections. Each ward should be under the care of a practitioner of a different cult. The results would prove interesting.

In time of war peoples are gradually shocked into a sense of deep feeling for the comfort and welfare of armies. In times of peace the civil forces are permitted to

work out their own salvation and the greatest liberty is allowed as to the methods whereby they may attend to their general health and welfare. When the bugle calls to arms there is a rush for medical assistance.

The Army says, "You must be vaccinated;" "You must be inoculated against typhoid fever;" "You must accept medical care and surgical attention." There is no argument as to the value of particular substitutions or methods for retaining health or curing disease.

The irregulars have no standing in the military forces of any nation. There is reason to believe that an important lesson may be drawn from the practice of armies. If the various cults are what they claim to be why is not advantage taken of their capabilities in any country of the world? If other nations fail to find their doctrines of practical service, why must America be content to permit the continuance of the licensure of their practitioners, regardless of their intellectual attainments, professional training, or essential fitness?

War may help to solve this problem which apparently does not appeal to common sense, reason, or scientific thinking, while peace prevails.

The Banana as a Food.—In the present crisis, when the question of the food supply bulks more largely than, perhaps, any other question of the day, it is incumbent upon scientific men to point out which kinds of food are the most suitable from the standpoints of nutrition and economy. From many aspects the banana ranks high as a food, indeed, in its capacity to furnish energy the banana may be compared to the potato. With regard to the food value of the banana, Dr. Victor C. Myers and Anton R. Rose writes most favorably in the *Journal of the American Medical Association*, April 7, 1917. To its considerable food value must be added its fruit value. The accessory food substances "which it contains as a fruit are of much importance. To obtain from the banana its highest dietetic advantages it must be eaten ripe, and nutritional studies have shown that thus eaten it is the *ne plus ultra* of fruits." Of the banana, regarded as an article of diet, may be men-

tioned its low cost, and it also may be termed a sanitary fruit, inasmuch as the peel protects it from contamination. As said before, in order to derive the greatest amount of good from the consumption of the banana, it must be eaten absolutely ripe, and a banana is not really ripe until the yellow of the peel takes on a golden hue and commences to speckle with brown shades. Oftentimes the banana which is passed by as over ripe is in fact in good condition. Like its prototype in food value, the potato, its salt content is almost the sole charge that can be brought against it. In the dietetic treatment of certain diseases, the banana holds no mean place and its use may be especially recommended for patients suffering from nephritis with nitrogen retention. Attention may be here drawn to the fact that in some parts of the world the banana forms the staple diet of the natives.

From banana flour may be made a nutritious bread, and it is well to remember in these times when economy of food should be the order of the day, that bananas are plentiful in this country and provide an inexpensive and nutritious addition to the diet.

Foreign Proteins as Therapeutic Agents.

—There is probably no line of research more fascinating at the present time than that concerned with the action of various protein substances when introduced into the human organism. A wide variety of tests have shown that injections of foreign proteins, such as sterile milk, egg albumen, certain cereal extracts, and so on into the body set up certain reactions which tend to establish a greater or less immunity or resistance, not only to the toxic effects of these and similar proteins, but also to many of those of bacterial origin. Considerable experimentation has been given in particular to the treatment of cancer with these substances, and while the final conclusions are still *sub judice*, some very striking results have been obtained, notably by Beebe and his co-workers. Vaughan of Ann Arbor has given much study to the effects of foreign proteins and many of his experiments bid fair to have a most important and far-reaching influence on the therapy of numerous ailments.

Much remains to be done, however, to

place the accumulation of information along these lines on a scientific footing. Many obscure points must be cleared up and definite standards established in order that the practitioner can safely and properly utilize the various proteins having special potency in the prevention as well as cure of the acute infections. The whole subject offers unlimited opportunities for study and investigation.

In an interesting and thought-stimulating article in the *New York Medical Journal* (June 2, 1912) Detwiler discusses this question of the use of foreign proteins—vaccines especially—in the prophylaxis and treatment of various diseases. He recites many interesting facts and refers to the work that has been done by different investigators.

Thus he mentions the noteworthy results that Mueller and Weiss have reported in arthritis, especially gonorrheal arthritis, by the intragluteal injection of sterile milk and sodium nucleinate, both of which cause a marked reaction. L. D. Smith has also shown that in gonorrheal infections an anaphylactic reaction obtained with horse serum, whether normal or gonococcic, is of great benefit, provided only that the allergy is sufficient. Continuing, Detwiler says equally good results are reported by Miller and Lusk in acute and chronic arthritic conditions, by intravenous injection of typhoid vaccines and proteoses. The literature contains many observations showing that in the treatment of infections, both acute and chronic, good results have followed the use of nonspecific substances, but since they were not in keeping with the prevailing conception of specificity they were regarded with incredulity. It is stated that these results were obtained with various suspensions of organisms, normal horse serum, diphtheria antitoxin, and various protein solutions, all of which when given in sufficient dose gave rise to febrile and leucocytic reactions, which were followed by at least temporary clinical improvement. There is no evidence, according to Mathers, that the specific in any way excels the nonspecific antigen. He has also observed that citrated human blood produces reactions exactly similar, when given, as is usually done, in transfusions. Naturally the interpretation given was that these were specific responses, but now we are inclined to think them nonspecific, and of the same nature as those

following injection of any foreign protein. In regard to the sources of the antibodies, we formerly regarded the body cells as the chief place of origin, but Becht and Leuckhart (*American Jour. of Physiology*, Vol. XL, 1916, p. 366) have shown that the hematopoietic organs are the chief source, and anything which stimulates them would flood the body and blood with antibodies and overcome the infection. Thus the present conception is that the antibodies do not reach the blood by the lymph, as they must if formed by tissue cells. Dunklin found that a marked increase in the antibodies follows the intravenous injection of proteoses in immunized rabbits. Hence, as Detwiler points out, this mechanism of immunization and cure consists of a selective stimulation of the hematopoietic system by non-specific substances resulting in the production of specific antibodies and allergic phenomena.

Referring to the manner of administration of foreign proteins Detwiler says that subcutaneous injections behave similarly to intravenous injections, when the doses are large enough, but the reactions are less sudden and severe. The severe reactions after the intravenous injections, while apparently alarming, have, so far as present reports show, been entirely free from danger and no harm has resulted. Great numbers of patients are now being treated and will continue to be treated by vaccines, for all sorts of diseases, and as harm may be done, we should take a conservative position and advise against the haphazard use of unstandardized bacterial proteins in all kinds of obscure conditions. If it is proved that, for therapeutical purposes, a foreign protein may be used, then some form which can be sterilized and standardized and its dose accurately measured should be adopted, such as a proteose, but this cannot take the place of the specific bacterial protein in sensitized or ordinary vaccine, for immunizing purposes.

Detwiler summarizes his valuable paper as follows: Parenteral injection, especially intravenous, of foreign proteins causes a chill, high fever, and leucocytosis as well as certain changes in the blood, especially an increase in the proteolytic ferments. These proteins may be bacterial or they may be serum, milk, or proteoses. After such an

injection, when followed by a definite reaction, marked improvement or permanent cure may result in typhoid fever and arthritic and gonorrheal affections. Whether this is due to the pyrexia, leucocytosis, or ferment increase we do not as yet know. At present, the possibilities are many, and the outlook bright for the cure by this means of many diseases in men and animals. The chief use of specific vaccines is protective, of the nonspecific protein therapy, thru allergy, curative.

Centenarians.—Newspaper comment on a man who has lived one hundred years is always interesting says the *Chicago Medical Recorder*. It is customary to publish a number of rules given by centenarians that presume to have been the life practice of the one who has lived so long. A recent publication of a set of rules deserves repetition and further emphasis:

Sleep eight or nine hours out of every twenty-four.

Work and exercise out of doors as much as possible.

Don't worry about things you can't help. Keep up your interest in the news of the world.

Laugh every time you find something to laugh at.

Remember your obligations to your Creator.

The Relation of the Internal Secretions to Each Other.—From a review of recent literature says Rothrock in the *Journal-Lancet*, the opinion that the internal secretions of the different organs react on one another seems to be gaining support. By certain glands, or groups of glands, acting supplementarily, and others antagonistically, there is formed a delicate balance between them, which is maintained in perfect states of health. It would appear, therefore, that the problem of the action of the internal secretions is very complex; and this view would go far to explain the many disappointing incongruities which confront us when we attempt to apply the known facts in the application of organotherapy.



SOME OF THE LESSONS OF THE WAR; THE NEW WAY OF NATIONAL LIFE.¹

BY

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Have we as a nation learned any lessons from the war, or are we likely to learn any is the conundrum with which one naturally approaches the subject. It is wise never to prophesy until you know, so perhaps it will be best to deal with the lessons which we should learn, and the serious national life to which we should strive to attain; a life which should be lived on a higher and nobler plane than the sordid selfish existence which has actuated the bulk of the inhabitants in the past.

During the past two years it has not been merely business as usual with a large proportion of the population, but they have striven and are striving to see how much they can make out of the war, and many, especially the middlemen and distributors, have done exceedingly well. A liberal donation to a charitable war object and a good investment of profits in the war loan form a good salve for their consciences, and they

take sweet unction to their souls that they are doing well by their country in these terrible times. A friend recently told me about a gentleman who had given £20,000 to a war charity but my friend did not appear to know that the same gentleman had cleared over £400,000 in one deal soon after the beginning of the war. A very clever and charitable man, no doubt, and some, perhaps very many, shoulders were relieved of the burden which he had amassed. Seriously are such persons likely to learn any lessons from the war; on the contrary are they not more likely to upbraid themselves for missed opportunities of making more money? The only person I can think likely to teach such people a lesson is the Chancellor of the Exchequer, but will even he grasp the nettle with sufficient vigor? The tax on war profits should not be confined to capitalists but should extend to those unpatriotic wastrels who have been on strike for an extra penny an hour, while the brave fellows in the trenches are not getting a penny an hour. Our officers who are risking life and limb in their country's service barely get a living wage, and yet a cool and calculating government deducts an income tax from their salaries; can gross ingratitude go much further.

There are enormous numbers in this country who have not felt the pinch of war, who, only for the information thrust on them by

¹ An address delivered at the Literary and Philosophical Society, Liverpool, February 19, 1917.

the newspapers, would barely take the trouble to find out that we are in the greatest war of history. So long as such people get sufficient to eat and drink, and their own skins are safe, they will not trouble very much about what is happening in the trenches. It is only when their food supply is endangered that they quickly cry out, what is our navy doing? And when a few Zeppelins kill a number of the civil population there are loud grumbles against an inept government, and the inefficiency of our aviators. There is no reason that I can see why the civil population should not bear the risks of war equally with the combatants, and from a national and eugenic point of view, the loss of a few thousand virile sailors and soldiers is a greater calamity than the loss of double the number of more or less useless civilians. One soldier is worth a thousand conscientious objectors. Military men make peace, civilians war.

Almost every one recognizes the necessity for a fight to a finish; a fight till German imperialism is crushed forever, a fight till the Hohenzollern and Hapsburg families and other megalomaniacs have ceased to be a menace to the peace of the world, yet there are many who do not wish to take a part in this conclusive fight; they think that those who like to fight can do so, while they should be allowed to wait and see what is going to turn up. Such men will learn no lesson, they will wear a button, and do half a day's work for two days' pay, and then boldly assert that they are serving a nation as well as those men in the trenches—and in this inane idea they have been often encouraged by politicians. We have often heard about silver bullets—bullets which no doubt find their way to the pockets of the

workmen for a very poor turn out of those of baser metals. These men will only learn their lesson after the war, when big wages are not to be had, when there is a scarcity of work and a plethora of labor. The glib trade unionists will not be able to galvanize their dupes up to the sticking point, and men will be fortunate when they can get a living wage. They will have to compete in the labor market with the women who have been emancipated by the war, and who have nobly done their duty regardless of reward; they have not gone on strike and every spare moment has been devoted to work for the comfort of sailors and soldiers. The mothers and wives have made noble sacrifices, they are the people who have been imbued with a high spirit of patriotism; the innumerable women who have suffered loss, whose husbands and sons have been killed or maimed have learned a sad lesson by the war. Their lives will forever afterwards be lived on a higher plane. Any pecuniary loss must count as dross before the sacrifices which they have made; the nation can never discharge its indebtedness to those families who have suffered, but it is to be hoped that at least those who have been maimed will be adequately cared for. Proper provision should be made now while our appreciation is warm, as I am afraid national gratitude will soon grow cold when the war is over.

Will the war teach us a lasting lesson? Will it raise up a great national party, in which every one will be for the state and no one for his own aggrandizement? I hope this may be one of the lessons of the war, but the prospect is not too promising. Social reformers and heads of government departments, men with a contracted horizon, are on the war path and trying to foist their ill considered schemes on the public at a

time when their vagaries may escape notice, when the leaders of thought and of men are too busily engaged trying to finish the war. John Stuart Mill truly said, "The worth of a State, in the long run, is the worth of the individuals comprising it." Our would-be reformers are crying out for an increased population at a time when we cannot feed and clothe those we have got, and at a time when, as Major Darwin points out, it is not quantity but quality which we want. If the war babies, for which great provision was made, had arrived there is no doubt in my mind that they would have been a better stock than those which our social reformers are anxious for the submerged tenth to produce.

Dr. C. V. Drysdale says: "Every enthusiast with a bee in his bonnet considers that it is neglect of his reform which is responsible for all the evils of humanity." As I propose to show that practically all our difficulties in this war are due to neglect of the population question, I am perfectly prepared to be included in the distinguished category of cranks.

For the past twenty years or so our country has been gradually and insidiously chloroformed into accepting a totally false view of existence. The persistent belittling of the Malthusian doctrine by the socialists and labor leaders, and their constant iteration of the absolutely baseless statement that "there would be plenty for all, if it were only properly distributed," has distorted the minds of everyone in every class, from pauper to artisan, to bourgeois, to politician, to minister, to aristocrat, to bishop. All classes are permeated with the idea that social evils are due to faulty distribution, which is to be cured by legislation of the "social reform" order; and that the wage-

earners are systematically defrauded of a considerable portion of the value of their labor, and are therefore justified in organizing themselves into unions of banditti, who enforce their demands on the government by putting a pistol at its head. No one is more ardently desirous of seeing the lot of the wage-earners improve than the neo-Malthusians, but that does not in the least justify the policy of highway robbery at the expense of the community which has been indulged in by the trade unions.

Contrast for a moment the policy of Germany and of Great Britain for the last few decades. The German statesmen have no philosophical illusions. They have accepted the views of our great teachers, Malthus and Darwin, whose lessons we have so shamefully ignored. They have appreciated that human life, like animal life, is a struggle for existence while over-population exists; and that the watchword for individual and national progress in this case is "efficiency." They have realized that the outcome of such progress is bound to lead to war, and have prepared for it with the thoroughness which has characterized their actions in every sphere of life. They have no sentimental ideas of preserving the weak at the expense of the strong; and the Nietzschean doctrine of morals, which our sentimentalists decry, is not only true in the main, but really far more humane in the long run than our maudlin humanitarianism—if over-population is to continue. The German workmen at least endorse the doctrine of efficiency. They work hard and steadily; they seek to improve and lower the cost of the products they turn out, realizing that if they capture the world markets, they are doing their best to increase the prosperity of the country as a whole, and of themselves as a

part of it. Germany's great crime against humanity is not her fundamental doctrine of struggle and efficiency, but the refusal of her rulers to welcome the new knowledge of neo-Malthusian contraception, which would enable the struggle to be eliminated, and the progress of herself and other nations to be maintained without conflict.

And what were we doing before the war? Pretty well everything to reduce, instead of to promote efficiency. Our government was spending all its time on old age pensions, the insurance act, revision of taxation on totally uneconomic lines, proposals for limiting the hours of labor and extending the authority of trade unions. Even from conservatives and bishops we were hearing the cry that "the first charge on industry should be an adequate wage for its workers," and that industries which could or did not give it were "parasitic"; that landlords who refused to build cottages for an utterly uneconomic rent were outside the pale of humanity, etc. Practically, the only cry of an authoritative character in favor of increasing our efficiency came from our present King, when Prince of Wales, in his famous "Wake Up, England!" speech. The whole of the time of our government was engaged in inventing schemes to placate "labor," and any suggestion that Germany or any other power could be a danger was derided. Worse still, the idea, no doubt, that they were continually defrauded of their just dues led the trade unions to endorse not only strikes, but limitation of output. Anyone who has had any knowledge of engineering will know that there has been a progressive deterioration for many years in the skill and zeal of the majority of workmen, and the instances given by Prof. Flinders Petrie, in his presidential address to the

British Constitution Association, were simply appalling. There is no doubt that the German view that we were rapidly deteriorating was true. We were living a lie, imagining plenty where was no plenty, preaching peace where there could be no peace, disdaining our own great teachers, both in economics and in physical science, the appreciation of which brought Germany such an ample harvest. Our government was simply temporizing to get popular favor, yielding weakly to the most insistent demands, dimly conscious of the fact that there was something rotten behind. How in the world could we expect that such a government could have the strength of purpose and character to direct a deadly struggle like the present war? We are up against the facts of existence, which probably not a single member of the government has ever seriously considered. "Fast and loose in one thing, fast and loose in everything," said Mr. Bucket, the detective, in "Bleak House." "Fast and loose in economic philosophy, fast and loose in every crisis," say we. The outlook for the future is by no means bright. One redeeming feature is that the eyes of many members of the government, and even of many of the thoughtful workers, as well as of the men at the front, have been opened to the danger of the old spirit, and we may expect some pretty plain speaking when the war is over. I firmly believe that British socialism and trade unionism are as great menaces to our country and to real human happiness as is the German militarism.

Frank recognition of biological laws, and of the severity of Nature, honest, steady and efficient work, the utilization of all resources for increasing output, cooperation between capital and labor, free bargaining between individuals, fidelity to contract and

promises, and above all limitation of families to incomes and fitness: these are the true roads to well-being. No government can be fit to deal with facts abroad, which is too cowardly or dishonest to face facts at home.

There is no doubt in my mind that if this country is to progress and not retrograde there must be no limitation of output in the future, and we must try to capture the markets of the world. For many years the output per man in America has been three times that of Englishmen; no wonder that the wages in America are high—deservedly so. The saying of Paul should be enforced “that if any one would not work neither should he eat.” That was Paul’s way of rationing the slackers.

The Very Rev. Dean Inge, from whose writings I have often had the pleasure of giving quotations, says “The economic question is again, quite distinct. It seems to me that the main doctrine of Malthus has never been refuted. Population does tend to press upon the means of subsistence, and is limited by the supply of food. Compare the abounding prosperity of half-empty countries like Australia and the Argentine with the pinched and miserable existence of the poorer Indians and Chinese. In a settled country the actual numbers are determined, not by the birth rate, but by the capacity of the country to support only a certain limited population under existing conditions. If there is a rapid increase, it is not because people wish to have more children, but usually because new markets have been opened for the export trade, in exchange for which food can be brought in. A small further increase may be possible by reducing the consumption of food per head,

but beyond this the owners of extra mouths must either die or emigrate.”

From the national point of view we are told that our safety requires a large population, and that France is lamenting her comparatively scanty numbers. But it is very doubtful whether France could support many more inhabitants, since, with all their ingenuity, the French are not in the front rank as a manufacturing country. We must remember also that a dense population, depending for its livelihood on an export trade, and for its existence upon imported food, may be a source of danger rather than of strength in time of war. Nor do we look with favor on the claim of Germany that, with her increasing numbers, which she absolutely must expand by exterminating her neighbors. The doctrine of “more food for powder” does not promise to increase the sum of human happiness.

This settlement in the colonies is the only way in which a great increase of the British race is possible. It is not possible for a much larger population to live in these islands, and no Philippics against family limitation will have the slightest effect in that direction. The pressure of population in these islands is a fact, as everyone discovers when he wants an appointment. The only way to relieve it is for the government to undertake the duty of helping young men and women to find homes in those parts of the empire where there is still plenty of “elbow room.”

The Germans looked upon France as a decadent nation because she had a stationary population, but by this time the Germans must have found out their mistake, and relinquished the prospect of “bleeding France white.” The French have shown an ef-

iciency in this war which we might well try to emulate. The French are a prudent and thrifty race, they have had no fresh outlets for their surplus population, hence they have added to a low death rate a selective birth rate, and in consequence the inhabitants show a high average standard of efficiency.

The French Canadians on the other hand, true to the teaching of the Church, are extremely prolific. With them Nature is lavish in the production of life and prodigal in its destruction. When I first visited Canada, about 19 years ago, I read some literature about the rapid reproduction of the French Canadians, and the marked contrast in the size of their families to those in France. It was then calculated that, at the same rate of fertility, in about a century they would not only populate Canada, but would overrun the whole of North America. The Yellow Peril was not in it with them. However there is not yet much change, the virile race in Ontario has not been pushed westward. Nature has her compensations, and this is evidently proving a saving grace to a less prolific breed. A high birth rate is accompanied by a large infantile death rate, and the natural increment in the population is not unduly excessive. Natural selection is still in force; the weaklings are being killed off, and no doubt a strong and vigorous race is left behind. The French Canadians have not swarmed over to help their racial friends and co-religionists, and compared with Frenchmen they are a poor breed. On the other hand what fine men we have had over from New Zealand where they have got a selective birth rate. There the population is rapidly increasing because with a low birth rate they have a still much lower death rate. The birth rate among Quakers is said to be only about 8 per thou-

sand, but then the infantile mortality is practically nil.

There are plenty of outlets for the surplus population of this country provided the stock be virile; our colonies do not want our degenerates. It is breeding from the upper end of the intellectual and physical scale which we should encourage, and all those social schemes for the multiplication and preservation of the unfit should be condemned. In this country, improvidence, large families, poverty, filth and degradation are found at the lower end of the social scale. One-half of the succeeding generation is produced by the lowest fourth of the present.

War is diogenic because it kills off the best part of the population, and leaves the miserable degenerates to carry on the race. Our social reformers are in such a hurry to fill up the gaps that they are strongly invoking the aid of the submerged tenth, without waiting for the return of whatever virile stock there may be left. We want an independent, self-reliant race which will increase the amenities of civilized life and largely add to the total sum of human happiness. We do not want a race of paupers and criminals who are outside the pale of civilized society. We are constantly hearing about the right to live, but that is not a doctrine held by any political economist, and no one has a right to live at the expense of other lives. Look at the army of unproductive officials many, or perhaps the majority of whom, have never done a useful day's work in their lives, whom we have got to feed in these days of stress. Government departments are holding up men of military age, men who ought to be in the trenches in place of eating the children's bread. Would the country be any the worse

off if two-thirds of these individuals disappeared the way of all flesh?

To what extent has social legislation during the past thirty years increased human happiness? There have been many expensive experiments and some improvements in the housing of the poor, the infantile mortality has been to a small extent lessened, infectious diseases have been well-controlled, food has been plentiful and fairly cheap but the means of procuring it by the poor inadequate. Much greater improvements could have been effected at a much less cost if we had not been breeding degenerates, and the thrifty working man had only had his own family to keep. Excessive taxation and the difficulty of maintaining a family in comfort have been primary causes in the limitation of the size of the families at the upper end of the social scale, but unfortunately the information which they possess has not been passed on to the lower sections. I have no doubt the emancipation of woman, and the control which she now possesses over her own body will do much to lessen this indiscriminate procreation. There are many, very many, women not fit to be mothers, and why should matrimony be the only outlook in life for such women? Women are now rising from lives of serfdom and in future will be able to become useful citizens in many walks of life.

It has been the serfdom of women and large families in Germany which have led to the present war. The expansion of Germany has been the cry of the Huns for the past 40 years or more, and if they had been content with peaceful penetration they might have captured the principal trades of the world in another 40 years, but this process was too slow for a race of cultured brigands, highway robbery was better suited

to their tastes. The question has often been asked, what would happen if a race of savages possessed modern implements of war and knew how to use them? The query has now been answered with a vengeance. If Germany be allowed to go on adding, as she has done in the past, a million savages a year to her population another great war is only a question of time—in half a century there may be a greater Armageddon than the present. The only reliable preventive measures are to drive her well beyond the Rhine, curtail her boundaries, seize her iron and coal mines, reduce her to an agricultural country capable of supporting about thirty million inhabitants. Further, in order to have a softening and humanizing influence over this savage breed there should be an army of occupation of three million Slav soldiers maintained in and by Germany and Austria for half a century. The Russians are good colonizers and rapidly intermingle with conquered races.

Of recent years this country has been copying German socialistic legislation to some of which I wish to refer.

First that gigantic fraud on the British work people called the National Health Insurance Act. I recently said that the only funny thing about that act was its name, as it was more closely related to a London fog than to any question of health. Since then we have had some side lights thrown on the working of the act. At a big luncheon held in London, no doubt paid for by those who attended, for if the parasites had not been receiving fat salaries no luncheon would have been held, Sir Edwin Cornwall, M. P., chairman of the joint committee, told the interested audience: "A few figures would indicate the gigantic character of their work. There were 2,000 societies, 20,-

000 branches, 14½ millions of insured persons, a turnover in a year of £25,000,000.

In 1915 sickness benefit was paid to the amount of £5,430,000, maternity benefit £1,333,000, disablement benefit £842,000, doctors £3,802,000, chemists £1,104,000, sanatoria £711,000." This leaves £11,778,000 unaccounted for.

It would be interesting to know how much of the £11,778,000 went in salaries to the army of officials and committees.

If this Insurance Act had been worked by the work people themselves they might have about £10,000,000 for distribution as bonuses each year or for investment in war loans. There is one thing certain that this so-called National Health Insurance Act has not improved the health of the nation. It has provided more or less indifferent medical attendance and cheap drugs, one doctor was fined £100 because he prescribed expensive, and what he considered necessary, remedies in place of stock mixtures.

The act for the mental defectives only affects the hopeless and harmless members of that class, and is never likely to reduce the output of these defectives by more than 5 per cent.

Now we have got a great movement against venereal disease, plenty of treatment but not a word about prevention. I recently asked a gentleman, who is touring about and lecturing on the subject, what he told his audiences about prevention. He replied that they were not allowed to touch on that question, altho it is obvious that prevention is better than cure. When the women come into power I expect there will be some sensible handling of social problems; there will be some bounds set to the reproduction of undesirables, and venereal disease may be stamped out.

No wonder that Karl Pearson said "that we are not breeding intelligence as we did 100 years ago." Can any one say that this war has been well conducted either by the politicians or the professionals? The politician had to be driven on by the very average intelligence of the man in the street. James Freeman Clarke said: "The statesman wishes to steer, while the politician is satisfied to drift."

When in 1907 I stated on the authority of one of the largest hatters in this kingdom that the average man's hat had diminished a size during the previous 70 years, the *Daily Mail* tried to disprove this statement, not by collecting statistics but by opinions. I do not know whether the heads of the *Daily Mail* staff were measured or not, but at any rate the statistics were not published. At one of the older universities information was obtained that some of their best men had comparatively small heads. All I could say to that was that it evidently did not take muckle O'a man to make a professor, and perhaps justified Cecil Rhodes' opinion of the grown up children in general.

If we want to raise up a healthy, intellectual race we must go to the root of the matter, and know the qualities which we want to breed. It is easier to breed for health and physique than for intelligence. The mind is the measure of the man, and brains are just as dissimilar as faces. *Mens sana in corpore sano*.

For the normal activities of the mental attributes you must undoubtedly have a healthy and properly nourished nervous system.

It not infrequently happens that men with brilliant intellects may also have inherited or acquired physical defects, and their will power may be able to control and direct the

operation of the mind, but it is within the experience of most intelligent individuals that the best mental work is accomplished when in sound health. An author is not always happy in the expression of his thoughts, and the phrases do not always flow freely, even from a facile pen, when he is not in bodily health. As Ruskin said: "The health of a state consists simply in this, that in it those who are wisest shall also be strongest."

John Stuart Mill's work on liberty should be carefully studied in the present day. If we allow this country to be governed by an army of bureaucrats as is now the tendency, a tendency much fostered by so-called social reformers, and other mediocrities with axes to grind, then this state will become Prussianized, and the last vestige of freedom will disappear. Mill says: "The only freedom which deserves the name, is that of pursuing our own good in our own way, so long as we do not attempt to deprive others of theirs, or impede their efforts to obtain it. Each is the proper guardian of his own health, whether bodily, mental or spiritual. Mankind are greater gainers by suffering each other to live as seems good to themselves, than by compelling each to live as seems good to the rest." "He who lets his world, or his own portion of it, choose his plan of life for him has no need of any other faculty than the the ape—like one of imitation. He who chooses his plan for himself, employs all his faculties. He must use observation to see, reasoning and judgment to foresee, activity to gather material for decision, discrimination to decide, and when he has decided, firmness and self-control to hold to his deliberate decision. And these qualities he requires and exercises exactly in pro-

portion as the part of his conduct which he determines according to his own judgment and feelings is a large one. It is possible that he might be guided in some good path, and kept out of harm's way, without any of these things. But what will be his comparative worth as a human being?"

"No government by a democracy or a numerous aristocracy either in its political acts or in the opinions, qualities, and tone of mind which it fosters, ever did or could rise above mediocrity."

"The Greatness of England is now all collective: individually small, we only appear capable of anything great by our habit of combining; and with this our religious and moral philanthropists are perfectly contented. But it was men of another stamp than this that made England what it has been; and men of another stamp will be needed to prevent its decline."

SCLEREMA NEONATORUM; A DESCRIPTIVE CASE.

BY

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To many of us upon this continent sclerema neonatorum is rather infrequently seen. In Europe more so. This condition has been described at an early date by Underwood and since then by others. Sclerema neonatorum may appear congenitally or within perhaps the first ten days of life. It has been known to have occurred later, however. Recorded cases have seemed to appear in emaciated, malnourished infants, in hospital wards or in institutions. Many in fact claim it to be purely an institutional disease. It is due

possibly indirectly to bad hygiene and improper feeding and is often found in families where the history of the mother shows a suspicious tendency to have miscarriages or premature births altho clinically the Wassermann reaction may not be positive. Sclerema neonatorum has long, rightly or wrongly, been confounded with edema neonatorum and many physicians today believe the two conditions analogous. There are many theories as to its pathology.

early site or sites of this condition is usually found upon the lower extremities and gradually more or less rapidly invade other and more distant parts within a period according to Stelwagon of 3-4 days. The color changes of the surface of the skin, and the changes of the subdermal layer are often multiple in character. The skin is usually first of a whitish color and waxy in character but may and usually does in the experience of many become lurid or mottled, gradually



FIGURE 1.

Langer believes that it is due to a solidification of the body-fats resulting from temperature depression. It must be remembered that the body-fat of the new born contains relatively so much palmitin and stearin that the latter may solidify when the body temperature drops below normal. This theory, however, is rather hard to credit. A much more plausible one is advanced by Wiedenhofer and Soltmann who believe that the draining of the tissues by serum loss is of wider importance. The

assuming a hard, stiff, leathery and tense condition with a marked cold surface feel, like the feel of raw pork. There is no pitting on pressure altho the skin is greatly indurated. In a few observed cases the infant seemed macroscopically almost to be made of marble. Often in light cases, and in our experience always in severe cases, the respirations are feeble, the sucking mechanism impaired. Attendant or gradually following this condition there may arise pulmonary and circulatory disturbances. The

pulse may fall gradually and usually it does so and the temperature drop below normal, *not* by any means an uncommon condition. In exceptional cases the condition may retrogress, the tissues soften and normal, soft pink skin and normal underlying tissues may result. An interesting description of a case of sclerema neonatorum in a five weeks old infant by Sobel is published in the *Archives of Pediatrics* of April, 1905. The patient described below

has been nursed from birth. The mother is apparently healthy, her breasts, however, are fatty. Her diet consisted of too much tea, coffee and meat. At the time she brought in the baby to the Post Graduate Hospital, February 6th another more nutritious and more easily assimilable diet was ordered together with daily bathing with cold water and more exercise than she was formerly getting.

The mother's history was suggestive—



FIGURE 2.

was seen conjointly with Dr. Marshall C. Pease. The accompanying photographs show the peculiar dimpling and leathery look of the skin. It may take however some leniency on the part of the imagination to appreciate what is to be seen in them.

Anna Nelson on February 14th was six weeks old, born with what the mother describes as yellow, scaly skin which desquamated like a snake's skin, and was probably identical to a vernix caseosa. She

one stillborn infant at eight months and another at six months, while before these she gave birth to four healthy infants. One of these died of diphtheria at 19 months. Anna came after these still births. A syphilitic history was unobtainable. A Wassermann reaction also on the mother and infant proved negative. The mother's milk at certain intervals was tested for a definite proportion of proteid and fat. This milk was found to be after a certain period of dieting very good. At no time

has the infant experienced vomiting, fever, fretfulness or malaise, and it has grown normally in weight and in bodily condition as other infants of the same age.

The physical examination showed a well nourished, well developed infant. Examination also showed a clear eye, reflexes normal, a normal pharynx, heart, lungs, kidneys also normal, and no enlargement of liver, or spleen, no tympanites or intestinal disorder, a normal vulva, no enlargement of glands in neck, axilla or groin. The infant placed upon its back cooed and swung its arms and legs like a normal child, placed upon the chest it raised its head but the arms, legs and back were held as if a board were drawn across the back. A large bluish mottled area presented itself extending from the angles of the scapulae downwards nearly to the knee joint and laterally well into both flanks. The temperature was slightly under normal. Above the anus on both buttocks there was seen an indrawn puckering of the skin, a deep dimple. My first thought was of erysipelas, my second of a probable deep-seated septic infection arising from this dimple. This large area felt like a piece of steak, yet well indurated, and the finger made no impression upon the mass under firm pressure except to drive away the capillary circulation from that part. The indurated area felt like the skin of a two weeks cadaver; the color was more bluish than red, mottled like blue-red macules. The buttocks were as boards. Above and below this large area the skin instead of being cold was of a normal temperature and soft and pliable. The respiration was normal. The cry and cooing natural. Such reflexes as knee jerks, Kernig's sign, and Babinski's signs were negative. A blood examination at this time showed—leucocytes 11,600, polynuclears 28, lymphocytes 64,

eosinophiles 8%. No urine examination was made. Her weight is 14½ pounds clothed, and she is nursing well and at regular stated intervals. The mother worried a great deal while carrying the infant, and slept poorly thruout.

Dr. Pease and myself saw the case once a week or once in two weeks. Under massage with goose grease, a good old-fashioned remedy, and perhaps the syr. of iron gtts. 4-5 t. i. d., fresh air, bathing, etc., the edges began to soften and the induration gradually disappeared. The clearing up therefore began at the edges, until only a small area the size of a small walnut was seen on the left buttock. This, let it be said, disappeared quickly.

Fortunately all cases of sclerema neonatorum do not succumb. According to the degree of invasion, to the long continued subnormal temperature, or to the severity of resultant conditions should the prognosis be considered good or bad, for where the body is extensively invaded the outlook is unfavorable. Where limited areas are affected and these areas scattered the prognosis is decidedly better. Subnormal temperatures are found usually in these patients where the involvement of sclerema neonatorum has been extensive, for in the less severe cases the temperature may depart but little from its regular ratio. In the recorded case the infant apparently experienced no pain upon deep pressure on the involved areas. It is also rather interesting to note that the mother had two premature births but that the Wassermann reaction in both mother and infant was negative. It is possible that malnutrition of the mother, for she appeared anemic, may have accounted for the poorly nourished infants and for the abnormal condition of the present case.

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ABSCESES ABOUT THE ANUS AND RECTUM.

BY

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This subject includes every collection of pus from a furuncle at the anal margin to the serious, diffuse, pelvic phlegmon which involves not only the rectum, but any and perhaps all other pelvic and even abdominal organs. The exact origin of the infection cannot always be demonstrated, neither can it be referred to the rectum, in every case. The treatment varies so much that each form must be considered separately.

Infections about the rectum and anus constitute about 25 per cent. of the ailments of these parts. This is not surprising when we consider the injuries of the rectum from without and within and also those other injuries sustained by women during childbirth. The really remarkable feature is how readily injuries and ulcerations heal in this region considering the numbers and varieties of bacteria abounding here.

It is very important to determine exactly which structures are involved in the infection before we decide as to the treatment. While certain cases respond quickly to very mild therapeutic measures others require heroic and ingenious surgery. Everything considered, the surgeon with the broadest conception of the case and the greatest resourcefulness will attain the best results.

The rectum, as a hollow tube, is held in place in the pelvis by connective tissues and muscles at points above, below, in front and behind, but on either side it is in relation with loose areolar and fatty tissues which are abundantly supplied with blood vessels

and lymphatics, and which are easily and frequently infected or inflamed, by extension from the rectum and anus or by breaking down of diseased lymph glands, or by obstruction to the circulation. There is a continual variation of blood pressure in these tissues depending upon the degree of fullness or distention of the bladder and rectum, and even on the position of the abdominal organs. These alterations have a marked effect on the development of infection. The rectum at all times harbors hordes of infective microorganisms, and the process of osmosis from the rectum certainly absorbs their toxins, while doubtless at times the germs themselves pass thru the rectal wall by way of lymphatics. It is a common thing in making rectal examinations to find sensitive points on one side or other of the rectum when there is no apparent intra-rectal lesion. Sometimes it is difficult to differentiate between muscular rigidity and tissue congestion. In still other instances the invasion is greater and the infection is diffuse or circumscribed and may end in abscess. This fatty areolar tissue is the least resistant of the body structures. The fat globules apparently making the best nutrient media for microorganisms (the colon and tubercle bacilli and the pyogenic cocci) and they soon fill the acini instead of the fat cell.

A perirectal abscess may be owing to one or more of several pathogenic microorganisms, the most common being the tubercle bacillus. Koch has asserted that the tubercle bacilli are never found in the rectum except when tuberculous ulceration of the intestine exists; but von Jaksch has demonstrated their presence in the stools of patients who did not have intestinal tuberculosis. Simons (quoted by Tuttle) has shown that the gastric juice, while it prevents the growth and

development of tubercle bacilli, does not kill them and that, when they pass into the alkaline intestinal juice, they still retain vitality; which proves that the bacilli may pass thru the intestinal canal and eventually attack the lower bowel, or rectum, without having gained a foothold in the intestine proper. Perianal and perirectal tuberculous abscesses frequently constitute the first evidence of infection, while the patient does not exhibit either then or even later any pulmonary involvement. To be sure, the infected discharges enter the alimentary canal very easily from tuberculosis of the nose, throat or respiratory tract; it also is possible that patients may be infected from rectal tips, bougies and other instruments that have been used on tuberculous subjects.

The colon bacillus is the germ coming next in point of frequency to be found in perirectal infections, and this seems to assume an ameboid power as soon as any injury to the epithelial layer of the mucous membrane permits it to escape from the intestine. Vaughn has carried out some interesting studies as to why this migration of the colon bacillus is not always followed by abscess formation. He states that each bacillus is provided with a capsule that contains the toxic principle, and that this capsule is not dissolved or destroyed by the alkaline fluids of the intestine, but is broken up by the gastric fluid, thus setting free the toxins. He further considers it possible that the blood serum also possesses this solvent property; when the bacillus enters an area with engorged capillaries, the capsule is ruptured and the toxins set free. Colon bacilli occasionally are found in pure culture in these abscesses, but are more often associated with staphylococci, streptococci or tubercle bacilli.

Naturally, there must be a solution of continuity somewhere in the mucous membrane of the rectum or on the skin to the anus, thus admitting the infection to the deeper cellular tissues. The point of entrance and the nature and depths of the lesion determine somewhat the location of the abscess, but the condition of the local lymphatic and capillary circulation and the variety of the invading microorganisms constitute the chief factors. The classification of perirectal and perianal abscess by Quénu and Hartmann is the most concise and complete, (see page 457).

The diffuse forms of the infection may develop as extensions of the superficial. Subaponeurotic abscesses are above the levator ani muscle.

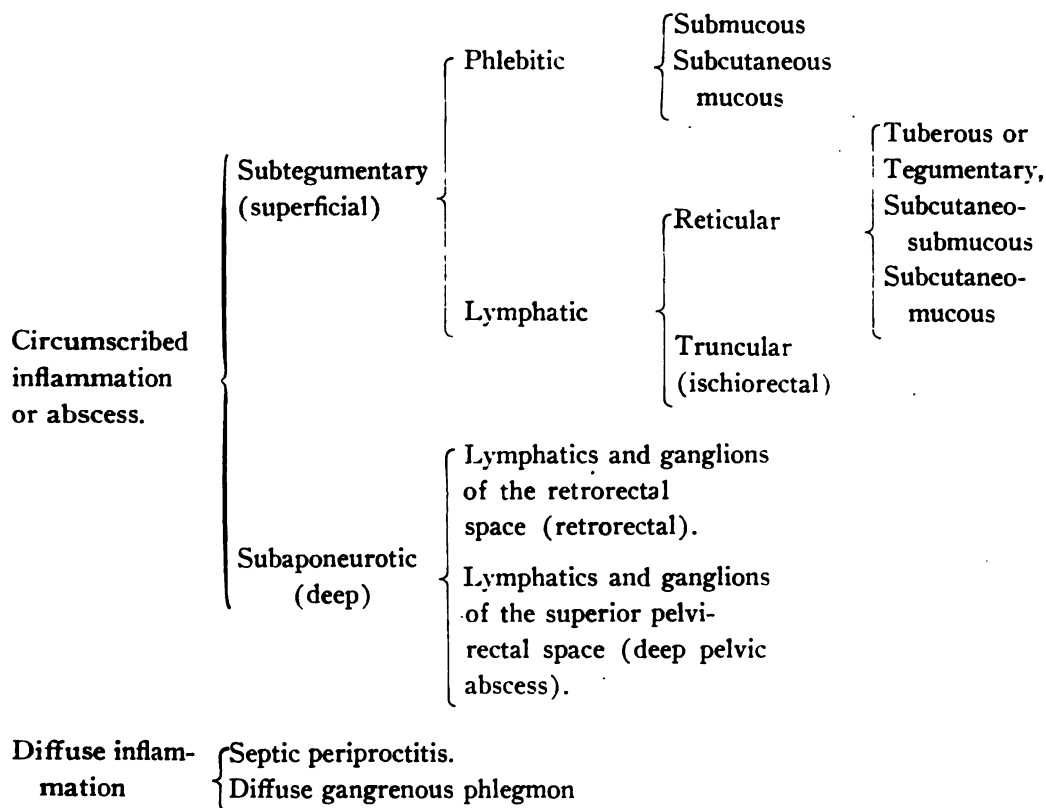
HOW THE INFECTION SPREADS

There are three distinct systems of lymphatics about the rectum and anus and a study of these will give us some idea as to the direction the infection is likely to travel. Those lymphatics in the skin about the anus called the inferior hemorrhoidal lymphatics travel along the perineum toward the inguinal glands or else back behind the sacrum. The deeper lymphatics pass thru the ischiorectal space to the hypogastric ganglia and make up the superior hemorrhoidal system. It connects with the vessels supplying the gluteal tissues thru the ischiatic notch and obturator foramen. Those lymphatics around the deep rectum pass to the sacral and vertebral lymphatics.

Infection-toxins gathered up by any of these systems may be followed along the chain. When the glands retain the poison and become inflamed, passage is blocked along that particular chain, but, as the networks anastomose freely, not only with

other branches of the same system, but also with deeper systems, the infection may thus be carried along other channels. In this manner, two or more distinct abscesses may develop. This intimate relationship of the various lymphatics explains the occasional development of abscesses quite distant from the rectum, but following a very simple local infection. Tuttle, speaking of this calls at-

Infections arising below the levator ani rupture on the outside or if into the anal canal they will open between the two sphincter muscles. Infections in the triangular space back of the anus will rupture on the skin or into the ischio-rectal fossa. Infections developing above the levator ani muscle usually occupy the superior pelvirectal or posterior pelvirectal spaces.



tention to the fact that injuries of the anal canal may be followed by abscess of the ischio-rectal fossa or in the cutaneous tissues of the buttock, while injuries deep in the rectum are likely to be followed by abscess in the retro-rectal space or deep in the thigh.

The levator ani muscle is the dividing level between the anal canal and rectum, and by its attachment separates these two.

Thus, regardless of its situation, the abscess is always secondary to some lesion of the mucous membrane of the rectum or of the perineal skin, even tho the abrasion cannot be found at the time of examination. The infection from these parts in being carried off results in either a breaking down of the gland or thrombosis of the lymph canal and thus develops an abscess. Singularly,

these abscesses develop most frequently in healthy, robust, active men. Quénu considers this a lymphangitis. Where an abscess has existed several days prior to its evacuation, a certain amount of adenitis necessarily develops in the neighboring glands and these may subsequently give rise to other abscesses. Microorganisms in these glands may remain virulent indefinitely.

MARGINAL ABSCESS.

Marginal abscesses arise at the anal margin and involve only the superficial tissues of the skin or mucous membrane. The infection may occur thru a hair follicle or Lieberkuehn gland, sebaceous gland or thrombosis of a vein in the neighborhood of the anus, or by abrasions from coarse clothes, scratching, horseback or bicycle riding, irritating toilet paper or discharges, either menstrual or diarrheal. These infected areas may vary in size from a little acne point to that of a pocket as large as a hazelnut. The lymphatics may carry the infection from such a simple focus to other tissues and a larger area become involved; but the toxin is always carried in the superficial channels and never invades the ischiorectal fossa or other deep tissues. This is a true follicular abscess, and the symptoms correspond with those of the follicular abscess anywhere; a tingling, burning pain is followed by a swelling, which finally ruptures, when pus and sometimes necrotic tissue (core) escapes. Rarely such an abscess is deep-seated, but if so, the symptoms are more severe and the whole picture resembles a carbuncle. Such a termination fortunately is unusual. These furuncles may be single or multiple and at times come in almost continuous crops until they make life a torment. Usually they do not invade the rec-

tum and, therefore do not interfere with defecation, but the patient cannot sit or walk and must take to his bed. Eczema, erythema and herpes may be etiological factors in these abscesses. Thrombotic hemorrhoids and other blood clots, being near the skin, put the skin or mucous membrane on considerable tension and rupture the base of the glands, or follicles thus opening the skin. Also, any pyogenic organisms circulating in the blood are likely to be deposited on this broken vessel and clot. There is usually some temperature, but no systemic complications. Altho this region is so richly supplied with lymphatics, both superficial and deep, the walls of the follicle prevent invasion of the deeper tissues, the abscess ruptures upon the skin or mucous membrane and heals without leaving a fistula, altho in weak or tuberculous subjects a sinus sometimes occurs.

The treatment of marginal abscesses differs radically from that of the deeper forms, in that incision and drainage frequently are followed by untoward complications. In a few instances, where the patient has learned by experience the course these infections run, he may apply early for treatment.

If the patient is seen before suppuration has actually developed, the colon should be thoroly flushed out and then the bowels constipated by means of opium; after which he is kept in bed and put on a restricted absorbable diet, while ice-bags are applied to the anus. The area of local inflammation for 3 or 4 inches around should be painted with ichthyol (undiluted) two or three times daily, succeeding applications being put on without first washing off what remains on the skin. Very good results have been asserted to follow injections of 95 per cent.

carbolic acid or of a strong salicylic-acid solution directly into the follicle if used early.

Where there is a tendency to recurrent crops, Hartman (Tuttle) recommends a 10 per cent. solution of salicylic acid in glycerin which is to be applied by the patient, himself, while after each defecation the parts should be bathed with a mild antiseptic solution.

The only time when these purely cutaneous abscesses should be incised is when a collection of pus may be evacuated by a simple puncture with a bistoury, and this cavity should be filled with ichthyol. A deeper and wider incision is liable to open the subcutaneous tissues to infection, where nature had walled them off. The X-ray seems to promise a great deal in these cases of continually recurring crops of furuncles.

SUBTEGUMENTARY OR PERINEAL ABSCESS.

Abscess beneath the perineal skin or beneath the mucous membrane of the rectum is a common affection of these parts. It is practically always secondary to some other disturbance and results from infection of the lymphatics, altho the abrasion of the skin or mucous membrane cannot always be found. The infection in being carried off, results in either a breaking down of the gland or in thrombosis of the lymph canal, and thus circumscribes the abscess. These abscesses occur most frequently in hearty, robust men, seldom in women or old people, and almost never in children, except the tuberculous abscesses that occur very frequently in little ones four to six years old. Cutaneous hemorrhoids (the remains of former thrombi) are always liable to recurrent inflammation and infection. The injection of hemorrhoids with carbolic acid is quite frequently followed by this form of abscess.

Quénu considers these abscesses to constitute a lymphangitis, the result of infection carried by these vessels from the rectum. The inflammation is diffuse and lies beneath the skin, and produces a subcutaneous-mucous abscess, or, if within the rectum a submucous abscess.

The symptoms of this form of abscess vary. It may develop without any systemic involvement, no chill and but very little fever or pain occurring. The abscess opens early and exudes a thin watery pus. A small ulcerated opening is found in the skin or thru the mucous membrane into the rectum. The tissues are undermined with a soft, boggy mass all around this opening, and sometimes this burrowing is quite extensive, particularly up between the rectal coats where it frequently forms fistulous openings into the rectum. Considerable burrowing may occur before any opening is made. With all this breaking down beneath the surface, there is usually very little inflammatory reaction in the skin. In other instances, there is a marked systemic reaction, a sharp chill, rapid pulse, fever and general malaise. The local symptoms develop, less suddenly, with a feeling of fullness and indistinct soreness, which gradually localizes and becomes sharply defined. There are present all the signs of infection. The tumor, located on one side of the rectum, is hot, red or violet in color, and tender and throbbing. Cases with such an onset and showing such severe systemic invasion nearly always are caused by septic micro-organisms, frequently a mixture of the streptococci and colon bacilli. The tubercle bacilli develop "cold" abscesses.

The location of the abscess somewhat determines the severity of the pain. Abscesses situated near the anus where there is con-

siderable loose areolar tissue that is easily distended, are much less painful than those higher up, where the various structures are firmly bound by the muscles and fasciae. Spastic contraction of the sphincter increases the pain.

When the abscess develops above the sphincter, it may open into the lumen of the rectum and then gives no external evidence. However, digital examination will disclose a globular mass, indurated or fluctuating according to the phase of its development.

The natural course of these abscesses is to rupture spontaneously. If the abscess ruptures through the skin, the result is a blind external fistula; if it opens within the rectum or anal canal, it is a blind internal fistula; or, if thru the skin and also into the rectum it forms a complete fistula. Very frequently in low-seated abscesses the internal opening will be found just within the anus. The distinguishing feature about these abscesses is, that they do not drain and heal like abscesses elsewhere, but continue to remain as sinuses. When the abscess develops between the layers of the rectal wall, it is called intramural.

Its constitutional symptoms are slight, usually consisting in a sense of heaviness in the rectum, painful defecation, and sometimes retention of urine. All these symptoms are present also in the case of inflamed internal hemorrhoids, so that, without a careful examination, an erroneous diagnosis may be made. Digital examination discloses local tenderness, swelling, and perhaps fluctuations. Bimanual palpation, with one finger in the rectum and counterpressure on the perineum will be of much value in the early diagnosis.

Just as I urged the importance of therapeutic treatment in marginal abscesses so

I wish now to emphasize the fact that, except where malignant disease or syphilis complicate, the deep abscess does not respond to anything except surgical measures—therapeutics here are a waste of valuable time.

In many of the early cases, local anesthesia may be used. By first touching the spot on the skin with pure carbolic acid on a probe or by firmly pinching the skin between the fingers for a few minutes, sensation is destroyed enough to permit introduction of the hypodermic needle, whereupon the novocaine-solution is injected. The incision should be a generous one and extend from the anus across the full length of the abscess. Diverticuli in the acute abscesses drain well thru the main cavity and need no lateral incisions.

The cavity should be thoroly flushed out twice a day with a physiologic salt solution or a mild antiseptic. In the intramural variety in any instance where the incision has been carried thru the sphincter it is necessary to dilate the anal canal, or at least the anus, sufficiently to open and cleanse the whole wound. The intramural abscess between the mucosa and musculature of the rectum must be opened from within the anus. Dissection thru the external wound upward alongside the rectum is not followed by good results. The important part is to carry the incision wide enough to leave no possibility of a pocket at the lower end of the wound—a condition similar to what occurs when the abscess opens spontaneously.

Rest in bed is essential to rapid recovery, for most patients get along more quickly and more satisfactorily if kept in the recumbent position.

Of especial interest are deep perineal

abscesses occurring in the triangular space back of the anus. This is usually a sequelle to ulceration in the posterior commissure between the two sphincters. Such an abscess may terminate (1) by drainage into the anus (usually imperfectly drained), (2) by rupturing thru the skin, when a complete fistula results, or (3) by rupturing into the ischiorectal fossa which if untreated ends in a horseshoe fistula. Diagnosis of these abscesses is usually made by the digital examination when the wall being frail it gives away and the examining finger enters the abscess cavity.

Symptoms:—The symptoms are vague and being secondary to the intra-anal ulceration the course is chronic. Pain occurs during and following the evacuations and may continue for hours. Later more severe exacerbations occur and the patient notices a swelling back of the anus. This may be very painful for a few days until the pus discharges and he is relieved altho pain of a lesser severity will be appreciated at each bowel movement.

Treatment:—Early incision and drainage. When the patient is prepared and ready for operation the rectum should be thoroly irrigated with normal salt solution. An incision is made posteriorly from the anus to the coccyx and carried thru the external sphincter muscle. The wound usually needs no drainage tubes but the edges are widely separated each day and the wound well irrigated. Light loose gauze dressings held in place with a T-binder is sufficient dressing. The bowels should be emptied daily with the assistance, if needed, of an enema. To stimulate granulations the wound may be lightly packed for twelve to twenty-four hours with gauze saturated with balsam of Peru and castor oil equal parts. The wound

must be examined daily to insure healing from the base and to observe that the skin edges do not invert and bridge over.

ISCHIORECTAL ABSCESS.

All perirectal abscesses are called ischio-rectal by some, but Etchepare (Tuttle) has found that less than 18 per cent. are situated in the ischio-rectal fossa. These abscesses develop outside of the rectum and beneath the skin and fasciae. They may be single or multiple, they may (and usually do) connect, behind the rectum, thru the space between the levator ani and the sphincter. Even when they develop on one side of the rectum and open spontaneously or if they have existed several days, a second abscess frequently develops on the opposite side. The fossae in which these abscesses develop are filled with fat, and as the pus fills the spaces, the fat is displaced; but the connective tissue reticulum remains, and the abscess is honeycombed in form instead of being one large abscess. It is essential in operating to break down these pockets, as otherwise the contained pus will burrow and infect new areas. There seems to be no limit to where these abscesses may travel. Frequently an abscess occurring on one side will burrow to the opposite, usually behind the rectum, and form a horseshoe or dumb-bell-shaped cavity, which gives the abscess its name. However, infection may be carried up thru the fossae on both sides and two abscesses develop from one source. This process usually goes on faster on one side than the other, so that one abscess may appear several days before the other. Such abscesses may not communicate with each other.

Etiology:—Ischio-rectal abscesses are more frequently found in men than women,

the percentage being 5 to 1. Young adults are mostly affected altho occasionally children may suffer. These abscesses always result from an infection due to one or more of the following causes, namely: injuries by foreign bodies, either thru the rectal wall or thru the tissues of the buttock; ulceration or perforation of the rectum, fissure or wound of the anus; very frequently some minor operation about these parts. Fistula and strictures are followed by abscesses; also squeezing superficial furuncles, (probably by forcing pus into the surrounding tissues) and sometimes kicks or bruises may be the cause, but the vast majority of cases result from some lesion of the rectal or anal canal. Where an abscess has existed for several days prior to evacuation, a certain amount of adenitis necessarily develops in the surrounding lymph glands which may subsequently give rise to another abscess. Microorganisms in these glands may remain virulent indefinitely, an illustration of which I will quote a case which shows this condition. Mrs A. suffered with an abscess and resulting fistula; was operated upon, and so far as she knew cured, and continued so for ten years. At that time she developed an abscess in the same ischial fossa. This abscess had existed several days when I operated and removed about a pint of very foul pus and necrotic tissue. The case was treated along lines laid down in this article and she made an uneventful recovery. The wound completely closed. She developed a third abscess in the same location in about six months and about the same amount of pus and debris was removed. This woman has never been pregnant. The uterus is small, but in good position and movable and no evidence of any pelvic inflammation. The bowels have

always been regular and the sphincters are normal in tone. No history of tuberculosis or syphilis. I believe this is a case of lymphadenitis, altho none of the glands are palpable, and in making my prognosis I told this patient that I feared she might have a recurrence of the trouble.

Symptoms:—As a rule, ischio-rectal abscesses develop acutely, with constitutional reaction, which in some cases is very serious, a slight chill is soon followed with headaches and high fever of 104 to 105 degrees F. Locally, there is a vague feeling of soreness within the rectum, which gradually increases to a dull ache, and later a throbbing pain which increases on defecation. The location of the abscess determines somewhat the severity of the pain. Abscesses situated near the anus, where there is considerable loose, areolar tissue which is easily distended, are much less painful than those situated where the sphincters are firmly bound by muscles and fasciae. The sphincter is also excited and its spasm increases the pain. Externally, there may be no signs at all if the infection is deeply seated; when the abscess develops above the sphincter, it frequently ruptures into the rectum and may present no external appearance. If near the surface, the signs of abscess will be seen; such as red or violet discoloration and swelling. A finger introduced into the rectum and pressed out and down will usually feel a circumscribed mass of induration, or fluctuation. Bimanual palpation with one finger in the rectum and counter pressure on the perineum will be of much value in early diagnosis. Defecation is extremely painful and dysuria may occur. Abscesses that originate below the levator ani muscle, which forms the physiological roof of the lower pelvis, empty either into the rectum

or upon the skin and are rarely fatal altho they may cause severe local and even systemic disturbance. In aggravated cases the swelling, tension, edema and redness about the anus appear erysipelatous and, a microscopical examination of the blood and excretions is necessary to differentiate such an abscess from true erysipelas. Sometimes in an extreme case inflammatory reaction not only surrounds the anus, but involves the scrotum, perineum and thighs. The pus found in these abscesses is thick and creamy, unless there has been an extravasation of blood, when it may be brownish, and a clot may be expelled *en masse* or as debris. Shreds of necrotic tissue are frequently present in the pus, indicating a septicemic character of the infection. The odor is foul and gangrenous, even tho the abscess does not communicate with the rectum. The gush of gas, when the abscess is opened, is due to the pent up condition and does not come from within the rectum. These gases are the result of bacterial life within the abscess. When the abscess is opened, either spontaneously or by the knife, the constitutional symptoms immediately subside and often within twenty-four hours will have disappeared, but it must be remembered that unless drainage is complete, another abscess will form and the whole chain of symptoms recur. This is the case quite frequently if all the compartments are not broken down during the operation.

As to the differential diagnosis, it must be remembered that hemorrhage into the connective tissue and resulting in a hematoma may produce all the symptoms of an abscess. Of course unless infection occurs there will be little rise of temperature, and no systemic reaction.

Treatment:—Free incision at the earliest

moment is the only proper treatment for these cases. Local applications have been discarded by all surgeons as useless, because while they do give temporary relief and may retard the progress somewhat, yet they never abort or prevent suppuration. We must never wait for fluctuation, but drain freely whenever we find a well-defined induration, unless we think it is syphilitic. The wound should be wide enough to expose the whole field, thus permitting the operator to see what he is doing and allow free and easy drainage. Unless the surface wound be made larger than the widest part of the abscess, pockets are sure to form and the pus go on burrowing. After the abscess is opened, the finger should be introduced and all partitions and bands broken, thus opening all pockets. Curettage is not advised because the steel spoon affords no knowledge of the condition of the walls, while the educated finger distinguishes necrotic from normal connective tissue. The curette may go beyond and carry infection into healthy parts. The cavity should be thoroly irrigated with 1:2,000 mercury bichloride solution; then if there is considerable oozing or bleeding, the cavity may be firmly packed and left thus for twelve or fourteen hours. At the end of that time the packing, (if used) is removed and a large rubber drainage tube introduced. It is of the utmost importance that the walls of the cavity be kept apart and free drainage allowed. When both ischiorectal fossae are involved, the surgeon's ingenuity is often taxed because the posterior connecting tract must be drained. To incise both cavities and also the posterior connecting sinus, would produce an infundibular anus. Hartmann opens the posterior cavity widely and inserts a drain into each lateral pocket.

In a case of my own I made a curved incision exposing the whole posterior connecting tract, and put a large drainage tube into either side. Altho wide undermining and dissection is made of the loose, connective tissue there is little danger of incontinence resulting. The more frequent complication is, that the resulting scars become so depressed about the anus that fecal matter is frequently lodged in them and is difficult to remove. Many of these abscesses rupture spontaneously into the rectum and form internal, blind fistula. Even where the abscess has been opened surgically, it is found clinically that a number of them rupture into the rectum subsequently, but it is not good surgery to make an opening into the bowel because of the dangers of incontinence and the prolonged convalescence which such action entails. Doubtless many of the ruptures into the rectum subsequent to these operations are due to some oversight in not breaking down all of the trabeculae. In some cases, where the partition wall between the rectum and the abscess was quite thin and where the abscess cavity converges to an apex, I have thought there was danger of rupturing this partition during subsequent treatment or that there might be a very small opening thru. In such cases I have reinforced this wall by approximating the walls of the cavity at this point with deeply placed fine catgut suture. Such a stitch holds the tissue for a few days, does not hold back the discharges and is digested long before the rest of the wound is ready to close. Every operation for abscess must include a thoro dilatation of the sphincters in order to prevent subsequent spasm of the sphincters or rectal wall. The dilatation also permits the free egress of gas and thereby adds much to the comfort of the patient. It

also prevents any collection of feces in the rectal pouch, which might cause undue pressure on the thin wall. Of course, the dilatation should be done after the abscess has been evacuated, because if previously performed, it would increase the danger of breaking the already thinned rectal wall. Also, the pressure and traumatism might squeeze pus out into the new areas or dislodge thrombi and thus produce septicemia in remote parts. Aside from the packing above mentioned, the only covering applied consists of a large loose perineal and anal dressing. I never use tubes in the rectum.

RETRORECTAL ABSCESS.

These develop in the tissues between rectum and sacrum and above the levator ani; they may result from necrosis of the pelvic bones or from perforation of the rectum by a foreign body (bougie or syringe tip), or, more frequently, following posterior proctotomy for stricture where there has been imperfect drainage. They may also occasionally occur as an extension thru the lymphatics, from old fistulous tracts, the breaking down of tuberculous nodules or of gummata or some ulcerative process within the rectum. Appendicular abscesses have been found here, but such an event is very rare. Retrorectal infection frequently follows ischiorectal abscesses and resection of the rectum.

Symptoms:—The symptoms are at first vague and indistinct. There are no rigors. A dull back or sacral ache and heaviness in the pelvis or sciatic region may be the only symptom. There may or may not be painful defecation. Usually there are signs of pus formation, to wit: temperature, malaise and a sallow complexion. External palpation about the anus and perineum elicits no

signs. Digital examination within the rectum, however, demonstrates a circumscribed induration back of the rectum or later as pus forms and the tension increases the mass becomes painful, fluctuates and obstructs evacuation. Retention of urine may also occur. The abscess may break into the rectum or it may burrow thru the levator ani, either separating or rupturing its fibers, and then open into the ischiorectal fossae and finally out thru the skin. A retro-rectal abscess in bursting thru the rectum may burrow considerable distance between the coats of the bowel and appear as an intramural abscess. (Quénu and Hartmann, p. 146).

Treatment:—A large crescent shaped incision between the anus and coccyx affords the most thoro drainage for these abscesses. Where the walls of the abscess are well-defined and covered with necrotic tissue, it may be well to curette; still this always involves danger as mentioned before. After thoroly flushing out the cavity a large drainage tube should be introduced and sutured to the skin; also the sphincter be dilated, as mentioned under ischiorectal abscesses. Packing the wound prevents drainage and should be avoided, except when necessary to care for the hemorrhage. Tonics, good foods and plenty of fresh air are the prime requirements, for these patients all need building up. The patient should be kept in bed or on his feet during the whole period of convalescence, and he must not be allowed to sit down, as that position compresses the wound and prevents drainage.

SUPERIOR PELVIRECTAL ABSCESS.

These arise generally from disturbances of the genitourinary or pelvic organs or even the abdominal organs which cause

ulceration of the anterior rectal wall above the internal sphincter or tubercular disease of the vertebra or sacroiliac joint, or peritubercular or tubal infections or even from injuries. The levator ani muscle forms a physiological roof of the lower pelvis, and abscesses originating below this muscle empty either into the rectum or upon the skin, and, while they may cause severe local and even general systemic disturbance, they are only rarely fatal. Above the levator ani, there is the peritoneal cavity, and infection here furnishes a different story. Large quantities of pus may collect and burrow into the bladder, vagina, high up in the rectum, the sigmoid flexure or out of the pelvis into the groin, but very rarely does it burrow thru the perineum. With the enormous development of such a pus cavity enough pressure is exerted upon the colon or urinary tract to produce mechanical obstruction.

The diagnosis depends wholly upon a careful examination as a mistaken diagnosis is common. The fever may be slight and the temperature irregular, the pulse rate slow and the condition mistaken for typhoid, diarrhea or the urinary symptoms may so mask the rectal signs that the patient is treated for cystitis or enlarged prostate. In men the abscess is usually anterior and to one side of the rectum at about the level of the prostate. In women the abscess is distinctly to one side. In some cases it may entirely surround the rectum and destroy much of the cellular tissues about the rectum. If this occurs the full function of the rectum cannot be restored and resulting cicatrices stiffen and contract the rectal wall.

Symptoms:—There may or may not be a history of previous ulceration of the

rectum. The patient first notices a feeling of weight in the rectum and a bearing down sensation followed with a chill and fever. The pain increases as the abscess develops.

Treatment:—Prompt free incision is indicated but just how to best accomplish this depends upon the cause and source of the infection. If an opening exists into the rectum it may be enlarged to allow free drainage. If there is no opening into the bowel it is not well to make one but rather attempt a deep dissection of the perineum. If the abscess is well defined to one side the skin incision may be made parallel to the fibers of the external sphincters but well away from the anus. If the incision is anterior to the rectum it should be carried up by blunt dissection with the fingers rather than using the knife to avoid wounding the urethra or peritoneum. When the abscess is opened, the cavity should be thoroly irrigated and then carefully palpated with the finger but the wound should not be stretched or torn because the tissues may give way unexpectedly into the rectum, bladder or peritoneum. After the abscess has been cleansed, the sphincter should be dilated to relax it and thus avoid retention of intestinal gases or feces which might strain the weakened septum between the rectum and abscess cavity. When drainage is needed a rubber tube should be left *in situ*. Gauze drains are not satisfactory where there is thick tenacious pus. The abscess cavity must not be packed but rather the walls should be allowed to come together as soon as possible. Daily irrigation of the cavity is necessary.

DIFFUSE SEPTIC PERIPROCTITIS.

This form of rectal infection belongs to the pre-aseptic era and is never found today except where gross carelessness has

occurred or following an injury that has been neglected. The local findings are acute inflammation about the anus and in the ischiorectal and retrorectal spaces and it is very virulent. It may appear a few hours after the injury or not for several days, and may extend to other tissues until it entirely surrounds the rectum; it may even extend to the peritoneum.

Symptoms:—The onset is insidious and the signs of systemic invasion come on slowly. Pain is felt in and about the rectum and gradually increases until it becomes intense and is accompanied by a feeling of fulness and weight about the sacrum and coccyx. If the attack follow upon an open wound or operation, the discharges change to a mixture of blood and pus and are very fetid, and the whole area is acutely inflamed, edematous and swollen. The patient becomes rapidly exhausted, often a sharp diarrhea sets in, also difficult urination or even retention of urine. Vomiting is common and there may be complete loss of appetite. Septic foci may develop in other organs, such as heart or pericardium, and precipitate the end. The whole picture resembles that of puerperal fever, and if allowed to run its course death results in a few weeks.

Treatment:—The treatment is one of prevention. Diffuse periproctitis should never occur in operative wounds and the precautionary measures lie in asepsis with free drainage when operating. Proctotomy for stricture and resection of the rectum are the operations most likely to cause trouble. If in the course of treatment the infection should occur, its remedy lies in bold, free incision of the inflamed tissues to allow easy drainage, and frequent irrigation with sterile water and saline solution. Hot boric dressings are also to be used

when possible. In other words such attention as will assist the circulation and prevent gangrene.

Resume of Treatment in General:—By avoiding tubes and gauze drains in these perirectal abscesses the after treatment is much simplified. The patient is not kept in bed until the cavity granulates to a shallow ulcer, but on the contrary is encouraged to get on his feet and walk about just as soon as he is able. I have several times had patients step to the lavatory, instead of using a bed pan, within a few days after the operation.

Altho I allow my patient to walk about to help himself answer the calls of nature and thus relieve the monotony and backache of a prolonged stay in bed, I very emphatically impress upon him the dangers of sitting down, because while our patient is prone the wound edges tend to gap and when he is on his feet the surfaces are perpendicular so that drainage is complete, but as soon as he rests upon his ischial tuberosities the lower skin edges are crowded together and the discharges dammed back into the nooks and corners. I therefore admonish him that rest in bed is essential, but he may be up and about each day for a little exercise. This is an important matter because these individuals are usually in otherwise good health and are frequently active, robust men.

The frequently repeated douches in large volume not only flush out the septic discharges as rapidly as they collect but it serves another no less important service. By the time a perirectal abscess has reached the surgeon a widespread lymphangitis and cellulitis has filled the pelvis and both lymphatic and venous circulations are much impeded. The douche here depletes the tissue thru the wound the same as does the vag-

inal douche in peri uterine congestions. In order to thoroly reach all parts of the wound cavity it is necessary to make a digital examination at each treatment and thus notice early any points of local tenderness or induration, or any pockets we have overlooked in the operation.

Another prolific source of danger in the after treatment is the lower intestinal canal. After the customary purging prior to the operation it is the practice of some to confine the bowels for several days that the wound may be spared the possibility of further infection. This I believe is an error, because no matter how well cleansed the digestive canal may be it still contains myriads of microorganisms and toxins, and as stasis is the first step toward toxemia it must be very evident that given a patient with a septic process in the pelvis it is essential that a positive current be kept up from the tissues into the bowels. The autointoxication that otherwise occurs after a few days is thus absolutely prevented.

By this method of treatment I save two or three weeks in the time of convalescence and the patient improves so rapidly in general health that he is anxious to get about his duties. But it is fatal to success to let him slip out from under observation too soon. No one will dress the wound as carefully and conscientiously as is needed except the operator and I hold my patient down until cicatrization is nearly complete.

In any case of abscess the cause should be diligently sought. If a fissure, ulcer or hemorrhoid is the offender it must be treated. Syphilis, tuberculosis and cancer must always be kept in mind. Abscesses always result from infection and the source may still be active when our patient comes to operation.

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THE SUCCESSFUL MANAGEMENT OF SCARLET FEVER.

BY

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Osler says, "The disease cannot be cut short. In the presence of the severer forms we are still too often helpless. There is no disease, however, in which the successful issue and the avoidance of complications depend more upon the skilled judgment of the physician and the care with which his instructions are carried out."

He then proceeds to outline a general and symptomatic treatment.

Tyson says, "After isolation and protection in bed against changes of temperature, the treatment of scarlet fever is in the main symptomatic, associated with a vigilant nursing that will guard against complications."

Strumpell says, "The majority of those cases of scarlet fever which take a typical course will recover completely without our aid." Then follow directions for hygienic and symptomatic treatment.

Caillé says for mild cases no other treatment but the bed and fever diet. The severer cases are to be treated symptomatically.

Dieulafoy says, "Scarlatina when slight or of moderate intensity, requires only careful hygiene; but the severer forms, with very high temperature and marked nervous symptoms, should be treated by cold sponging or by baths." Then follows detailed symptomatic treatment.

Wm. Hanna Thomson seems more disposed to make a fight from the beginning without waiting for the enemy's masked batteries to open fire. He begins with a two gallon fountain syringe of hot water (he

doesn't say how hot). This water from a height of five or six feet is to be douched into the fauces, washing out the secretion from the inflamed tonsils and adjacent parts. He says a little potassium chlorate and oil of peppermint *may* be put in—evidently laying stress on the cleansing and heat, which he says is not only soothing but curative.

With such an array of authorities offering no medicinal treatment for the disease *per se*, one must have strong convictions, who is bold enough to offer a remedy with which he claims to cure the disease.

I first employed colloidal silver in the form of Ung. Crédé, a 15 per cent ointment; in scarlatina about May 1, '99, after having used it in a malignant septicemia with marked results. The scarlatina patient was a girl 8 or 10 years old, all over as red as a lobster, the glands about the angles of the jaw very much swollen, and she is picture of misery.

I gave the mother some ointment to be rubbed into the back. In a few minutes she said, "Look, doctor, it goes in like 'penetrating oil.'" I looked and thought I could see the black ointment fading into the skin. But besides this a striking change had occurred. The skin as far as touched was absolutely blanched, the red color having entirely disappeared. The next day the girl was bright and cheerful, the fever and swelling almost gone. With the continuation of the medicine she was well in a few days.

About a month later I saw another scarlet fever case with a very sore throat, which failed to yield to other remedies, but did at once to the Ung. Crédé.

I then concluded that if Ung. Crédé, the only form of colloidal silver then known to

me, was effective in the accidents of scarlet fever, it ought to prevent them if used at first. Hence I adopted it as my initial treatment in all cases, with the result that in now more than sixteen years I have not had an inflamed ear, and only one suppurating gland, that in a child which already had a running ear, from which the infection probably came after the decline of the fever and the cessation of the use of the ointment. I know of only two other cases in which there were any swollen glands. I have had but one case of nephritis, that in a little fellow about six years old, who was feeling so well that he was taken out for a long walk on a cool Sunday afternoon about two weeks from the beginning of his sickness. For the last nine cases a second visit was not necessary, and was not made except in one, the daughter of a brother physician.

With this experience, I make bold to say that properly given, colloidal silver is as sure a specific for scarlet fever as is anti-toxin for diphtheria.

I know that some of my friends have used the remedy without success, but when I hear of such cases, I question the technique.

We all recognize that quinine is an effective means of relieving the so-called malarial chills. If, however, twenty grains is necessary and we give five, or if twenty is given and not retained, or if given by the bowel and at once passed, we do not lose our faith in quinine, but try to improve our technique so that the next attempt will be more successful.

This question of administration may be illustrated by the experience of a medical friend. Some years ago he treated a case of scarlatina with Ung. Cr  d   and had both running ears and suppurating glands. I know nothing of his technique. Later I saw

with him a patient with an infected scalp wound, four days from date of injury. The wound was suppurating freely, face red and swollen, and the lymphatics swollen down to the clavicle. Temperature was $102\frac{1}{2}$ at 9 a. m. The patient had had no rest since the injury. The doctor called my attention to stains on the shirt showing the use of Ung. Cr  d  .

At my suggestion the hair was cut away for an inch or more around the wound, the whole covered with the ointment; this with gutta percha tissue, and secured by a bandage. After washing out the bowel with warm water, he was given twelve grains of colloidal silver in a teacup of warm water per rectum. This was to be repeated at bedtime. The next morning he reported a good night's rest and had less fever. The second morning (48 hours) he was "feeling fine" and had no fever.

Two or three days later I was called back to find an abscess four inches across had developed without any rise of temperature. This rapidly healed when a free drainage was secured by removal of some necrotic material from the bottom of the wound.

Last year the doctor told me that his little girl of four had scarlet fever and asked what to do. I told him to rub in plenty of Ung. Cr  d  . He phoned next day that she still had 103 temperature, and asked me to come to see her. I found the ointment smeared under the arm, but had not been rubbed because she said it hurt. Her bowel, rather constipated, was washed out, and she was given two grains of colloidal silver in two drams of water; this repeated at night. The next morning her temperature was 99, but rose for a short time in the afternoon to $102\frac{1}{2}$, then fell to about normal and re-

mained so. The medicine was then given once a day for about a week.

Across the street was the little daughter of another doctor, an aurist, taken sick one day earlier than this one. I was called to see her in about a week, with one ear discharging and the drum of the other very red. The same treatment with possibly the rubbing in of some of the ointment around the ear brought about an immediate improvement and rapid recovery, and made the father an ardent silver man.

The gist of the whole thing is to saturate the patient at once with colloidal silver and keep him so. Do not be afraid of any poisonous effect, for it is absolutely non-poisonous.

With small children I generally direct that the ointment be rubbed *in*. I am frequently asked where the rubbing shall be done. I reply it makes no difference except to rub it until it disappears, which generally takes 25 to 30 minutes. I suggest the back, as most people like to have their backs rubbed, and very few enjoy rubbing under the arm. On the inner part of the thigh is a very good place, if the patient wishes to lie on the back.

For an adult I generally direct $\frac{1}{8}$ oz. of ointment, if ointment is used, rubbed in once or twice daily according to amount of fever. With them however I generally prefer colloidal silver in solution by the bowel, ten to fifteen grains twice daily if fever is high; once daily after it falls. If bowel will not retain it without, give an opiate.

The dose for children should be regulated according to the size of each patient.

Hemoptysis.—The satisfactory treatment of hemoptysis is dependent upon a previous adequate knowledge of the conditions to be treated.—*Fonssagrives*.

HORMONE THERAPY IN CHILDREN'S DISEASES.¹

BY

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The problems associated with ductless glands are becoming more complicated daily. Probably no medical subject has received more careful thought by so large a group of practitioners for so long a time with so little really new knowledge as has this enigma of the animal make-up. We are quite certain that all these glands have to do with the vegetative portion of our development. It is a waste of time to go over the text-book functions ascribed to each gland, except to state briefly that their functions overlap and that at certain periods of life particular glands seem to be more active than others which in turn act more powerfully at other ages of the individual. For example, the thymus seems to be of greatest importance in infancy and childhood while the ovary and testicle are of greater value during the sexual or reproductive periods of animal life. We are also quite sure that some of these glands help or excite others of a similar group to be more active while others act as antagonists to one group yet stimulate the glands of their own kind. For example the thymus antagonizes the thyroid, while the pituitary excites the gonads to increased activity. All of these glands secrete into the lymph channels a definite chemical substance which is called a hormone. Each gland has its own hormone and the treatment of their disorders is called hormone therapy. We may then call this paper a resumé of hormone therapy in the diseases of infancy and childhood. Only the scanti-

¹Read before Brooklyn Pediatric Society, March 28, 1917.

est information can be divulged on this vast subject in a short paper and no attempt will be made to include everything known. In order to be more practicable and less in text-book parlance it is wise perhaps, to pick out a few of the better known results in certain conditions which one is likely to meet daily in children.

Osteomalacia, a disease whose symptoms we all know, has as its main cause an excessive excretion of calcium salts from the body. Many of these cases do not improve much even if an excess of these deficient salts are administered. In the adult, ovariectomy is often done because the ovaries when hyperactive produce the condition at times. The adrenal glands counteract this activity and in children even when lime salts are given it is wise to give these glands in maximum doses. Robin of Paris believes that the lime salts of the human body are chemically different from other lime salts and gives ground bone rather than any other kind of calcium medication. Brunet wrote a long article in French to prove that the only properly assimilable salts of calcium are obtained from powdered bone. He states that at various times the body requires varying amounts of calcium. This differs with changes in activities both mental and physical, and the bones supply the general system with these salts. The nice balance is of course kept up by the hormones of the adrenals and pituitary on the one side and the gonads on the other.

The author has seen a case of a Norwegian child who had been at sea since its birth. At the first examination it was six years of age. It was misshapen in every way. The head could not be flexed from a position of hyper-extension. A pot-belly with very short legs and arms. The whole

child was only thirty and one-half inches in length. Mentally it seemed to correspond to a child of two but physically it looked like a monstrosity of nine months gestation. The doctor who referred the case never expected any results but thought it worth showing to his friends. A diagnosis of osteomalacia due to dyspituitarism and hypothyroidism was made. Calcium lactate, together with hypodermic injections of the extracts of pituitary and thyroid almost cured the case in two years. The parents had to take the child back to Europe where the treatment is being continued. In this case the bones were so soft that one could bend them easily. He could not sit up and had to be fed with a bottle. The last time he was seen he could run around and move about as well as the average child of his age. He was still quite dwarfed in stature.

In rachitis another form of improper calcium metabolism similar treatment must be thought of to get lasting results. It hardly seems reasonable to observe one twin rachitic and the other one quite normal when the same mother's breast nourishes both children. That this does occur we all know. That the old idea that one of the children will probably be weak is antiquated we must confess. The same food, the same environment, the same age, yet one is rachitic. It is this kind of a case that is the least assisted by calcium salts without proper ductless gland therapy. The one child uses its calcium to the best advantage, the other does not metabolize these salts properly and when more are given, frequently the already overtaxed economy is irritated and in addition to the existing disturbance a gastrointestinal ailment supervenes.

Stöltzner suggests a relation of myxedema

to rickets. He compares the physical appearance in both conditions. He has given suprarenal gland to a number of rickety children but adds that his results are questionable. He places much importance on the heredity, geographical and ethnographical distribution of myxedema and rickets and has established a theory which has neither been accepted as true nor positively disproved.

Mendel and Mettenheimer tried thymus and Knöpfelmacher and Heubner tried thyroid with varying results. In recent years we have come to believe that a combination of glands is what is at the bottom of the faulty metabolism. Thus, Carnot used mixed extracts with startling results. Woodward of St. Bartholomew's Hospital, London claims universal improvement with a combination of one grain each of thyroid, thymus, pituitary and adrenal glands. As a matter of fact combinations of glands work better in nearly every case than any single gland. Each gland seems to work more powerfully when so combined. One of the large drug houses has been preparing for us a combination for hypodermatic use. This has been tried only in six cases of rickets and to draw a conclusion at present would be folly.

In concluding this short resumé of rickets we must not forget that some pediatricists do not ascribe to the ductless gland therapy at all. These are for the most part men of the old school who are loathe to accept anything new; no matter what, how, or why the presentation. Hormone therapy or opotherapy as some choose to call it has a place in this disease and a proper trial will convince anyone. Combinations are better than simple glands and in young children especially, hypodermatic medication brings the best results.

Urinary incontinence is another important matter which occurs at the age under discussion. This may be due to a hypersensitive bladder, to improper functioning of the sphincters, to irritating urine, to too much urine being passed into the bladder, or to a disease of the nervous mechanism of the urinary tract. It would take a whole evening to consider each of these factors alone but, in general, if we take the view that too much urine, which is most naturally first thought of, is caused by diabetes insipidus and mellitus, by high blood pressure, or improper assimilation of the body fluids, one does not ponder long that the ductless glands play a role in the condition.

Diabetes mellitus is due to faulty carbohydrate assimilation. The endocrinous glands controlling this function are first the pancreas. Without going into a prolonged discussion of what all students of this thoroly misunderstood condition think, any recent text-book on medicine will state that an internal secretory gland is in back of the disorder. In 1889 von Mering and Minkowski showed that removal of the pancreas was invariably followed by diabetes mellitus. In 1877 Lancreaux called the condition "pancreatic diabetes" when on autopsy a degeneration of the gland was found. Biedl, Lepine, Caparelli, Harley, Selig and many hundreds of others have verified the proof that there exists an association of the pancreatic hormone and diabetes. Von Noorden in his book states that every case of diabetes is a case of pancreatic insufficiency. At the Rockefeller Institute Opie after much painstaking experimentation states definitely that every case of diabetes is associated with degeneration of the Islands of Langerhans.

With such statements and the volumes of other evidence at hand it does seem a

rank injustice to treat a patient suffering from diabetes mellitus no matter what the age without pancreatic extract.

When we come to diabetes insipidus the main gland bearing a definite relation to the condition is the pituitary, posterior lobe or infundibulum as it is called. Francesco, Cushing, Timme and Hofstadter all state that these cases have been absolutely cured with injections of pituitrin. We have had two cases one an infant of three and one a child of nine years. In both cases pituitrin was used but thymus was also used together with ergot and the patients were cured. Thanks to all the treatment no positive statement from experience can be made. In an adult pituitary gland alone did no good but when adrenaline and ergot were combined the cure was effected. This case has remained well for several years. We have had no experience with thyroid in this condition but theoretically it is also of value because its hormone activates the pituitary secretion.

Some experimenters have claimed results by treating these dyscrasias with "antagonistics." That is by using hormones of glands which theoretically make the condition worse. These are used temporarily and then those first mentioned are given. The idea is similar to that when one gives mercury to bring out the Wassermann reaction.

In studying the bloody transfusion and exudations together with the types of hemorrhagic diseases and hemophilias a large topic is thrown open. In nearly every case the whole pharmacopia is used but seldom so well-known a remedy as liver extracts. These have a distinctly hemostatic effect. Cod liver oil differs from olive oil in this particular and when one desires only the fat content of the oil why should the worst

tasting remedy be sought. A series of experiments mentioned by Carnot and Gilbert state that liver extracts are the only hemostatics of value in all these diatheses except in the hemophiliacs. Luciano, Keim and many others state the real benefit derived is from prophylaxis. That is in a known case of or in a family with bloody-dyscrasias, or even in cases of tuberculosis to prevent hemorrhage about sixty grains of liver extract should be administered several times daily.

Altho in hemophilia we often have enlarged thymus or lymph glands the author knows of no treatment which has a definite value. Sera of horses and pigs in dry powder form or in a liquid state have proved of some value when the hemorrhage was started. This is not hormone therapy, however, but the mere presence of a foreign proteid seems to cause the blood to coagulate.

Liver extracts seem to be of immense service in those children who suffer much from urticarias, skin hyperemias, or localized edemas to which no definite local cause can be attributed. It is naturally foolish to treat a case of improper dietary regime in this way. We must seek the cause of the condition here as in any other disease and try to remove it. It is only after everything has been tried without making headway that this newer form of medication is offered.

There is a condition of general endocrinous disturbances which we have found going thru whole families. This does not seem to be mentioned by any previous investigator. There is either too much or too little secretion of one of several glands in members of a family for several generations. A combination of hypothyroidism in a brother, a sister with hyperthyroidism

and ovarian excessiveness, together with a mother who is very obese and apathetic in the same family where two feeble-minded children were born is one experience which was encountered. Another family, a young married woman had her goitre removed for a typical Graves' disease. Her mother weighs three hundred and ten pounds, a nephew of ten weighs one hundred and thirty pounds and is mentally only six years of age. This last mentioned boy was very slow in all his bodily movements. He had to be dressed by his mother. It took him on one occasion, in the office, twenty minutes to lace his shoe. Even to put spectacles on his nose was so slow a drawn out process that it seemed it never would be accomplished. Pituitary extract, posterior lobe and thyroid extract hypodermically twice a week has brought about such a marvelous change that he hardly seems to be the same boy. He has lost fifty pounds in weight. Feeds and dresses himself like any other boy and assists a good deal in the house-work of his home. His school-work has so improved that the boy was taken out of an ungraded class and placed in a regular class. He was promoted this term.

It will be noted that in both these families the peculiar excesses and deficiencies vary. The number that have come under our observation were quite considerable altho no statistics were kept regarding the particular point. One other fact that experience has shown is that tuberculosis in these families occurs rather frequently. Whether this is due to a constitutionally inferior individual; whether a mere coincidence exists; or, whether as many workers in this field believe, the endocrinous organs have as one of their main functions the combatting of infection or the increasing

of bodily resistance is mere speculation. Several foreign authors make claims regarding the matter and feed children of tuberculous parents with thyroid extract as a resistance builder. One man in upper New York State thinks that carcinoma in some cases could be prevented by a prophylactic treatment of properly selected ductless glands. What the rational of this may be we do not know. This man has had some wonderful results in treating experimental cancers in chickens and mice. The bulletin of the New York Board of Health had some proof that carcinomas were not hereditary and that seems to be the general opinion today. Therefore exactly which children are to be given prophylactic treatment is very vague.

In all cases where a reason exists for suspecting ductless glandular disorder in several members of a family it has been our practice to give the children small doses of thyroid and pituitary as a prophylactic to prevent some of the distressing mental and physical processes which so often follow. No harm can possibly come when the patient is constantly under a careful physician's eye, and the dose regulated according to the effect on the child. The careless giving of these medicines is to be deprecated as much as the careless giving of any thing else worth while. When a harmless mixture is given the patient must not be so carefully watched but these glands are powerful and may in certain instances be dangerous.

To spend any time at this meeting to go into the various states of cretinism, myxedema, dyspituitarism, or other well-known types of mental and physical defects due to diminished or hypersecretions of the endocrinous organs is impossible. As a general proposition it may be stated all those

cases where thick, waxy-like skin and features exist with a sluggish mind and possibly choreiform twitchings the first gland derangement to think of is the thyroid. In these cases our custom has been different from that more recently advised. Many give as small a dose as a tenth grain of thyroid once or twice a day, believing the thyroid in the body will be stimulated by the small dose to increased activity. We give, usually, one tenth grain for the first day and rapidly increase the doses getting up as high as ten grains or more a day until definite symptoms of hyperthyroidism are established. Here we stop, give eliminatives, then keep the patient on one-half the daily dose which brought on the dangerous symptoms. The results seem to be achieved very much quicker. If one is in doubt whether the thyroid treatment will be of any value, often one week will show some evidence of the treatment. It is of interest to remark that some of our experiences have been exciting. Three cases had convulsions similar to those obtained from over-dosing with strychnine. Rigid muscles, opisthotonos, clonus and tetanic spasms were seen. The ordinary case does not go any farther than the patient who receives strychnine and begins to complain of nervous trembling, restless nights, tachycardia, etc. Of course this is the signal to stop for a time and then reduce the dose to half the amount required to bring about such a state.

In general it may be said also that when a sluggish mind exists together with especially long bones and under-developed sexual organs we should think first of the pituitary.

Blood counts which are abnormal as to the number or proportions of the white cells and enlarged lymph nodes should make one turn to the spleen. While abnormally

shaped red cells and general weakness should draw one's attention to the red bone marrow.

Pineal gland in much larger doses than any authority mentions were used in a number of cases without any results whatever. Berkeley and Dana's experiments are the only ones that claim good results from this treatment in any large group of cases. A series of experiments with rats was tried by one observer. All the animals were of the same age. Some were unmolested as controls, in others the pineal glands were removed and the development in weight, size, movements and reproductive ability did not vary at all.

In two boyish girls ovarian extract made no change, but in one of a number of girlish boys testicular extract produced good results. In one case of undescended testicles, in two days the testicles descended with orchitic medication. This may have been a coincidence. We did not have the opportunity of trying it on another child.

The adrenals are most likely to aid obscure pigmentations, altho pituitary and spleen extracts may be of more service in certain cases. Almost all the glandular defects except the thyroid are capable of producing pigmentation. In these cases we must take the other symptoms into consideration.

We would hardly cover this subject unless brief mention be made concerning such glandular disturbances as precocity, infantilism and obesity. Abnormalities of this type are frequently met in daily practice and it behooves the medical adviser to know the possible causes of the peculiarity. Menstruation as early as six years occurs, but when a bloody vaginal discharge takes place at two or before exactly what to do becomes a problem. The cortex of the ovary, adrenal extract and according to

some writers, thymus are the glands of choice. In one girl of eight all these glands were tried without any success. This girl became very weak at each menstrual period and showed symptoms of secondary anemia for several years. She is quite a young lady now of nineteen and is strong and well developed, physically and mentally.

In cases of infantilism where both mentally and physically the children remain at a stage of development below that of their chronological age, the use of these glands is at present the only means of combating the disorder at our disposal. It takes a careful and prolonged study of each case. Often even then it will be found wise after weeks of treatment to change the whole combination of extracts given to get the best results. Hypothyria, hypothyroidism, dyspituitarism are the most common causes of infantilism. These same glands together with an improperly acting ovary may be cause for abnormal obesity. As in the other conditions, one or a combination of these glands must be used according to the case.

In conclusion, pressure from the outside on these endocrinous organs may cause an endocrinopathy. Tumors, pus, scar-tissue, aneurysms and all the other causes for pressure should be taken into consideration in diagnosing and treating these disorders. The more one uses these glands the more complex their functions become. The thought in the preparation of this disconnected group of statements was to point out a few original and other positive ideas in endocrinology of infancy and childhood. It was also the definite purpose to omit some of the extravagant claims which ultra-enthusiasts constantly propose from mere speculation. One lesson which we should take home is that very few of the disorders are simply due to a single gland and only thru careful study of the case and with

frequent changing of the pluriglandular therapy may one effect those wonderful cures with which our medical literature abounds.

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WHY DO WE NOT USE MORE CORN MEAL?

BY

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H. C. Barnard, State Board Chemist, raises this question in *AMERICAN MEDICINE*. He shows its economy (at \$1 a bushel) over wheat, potatoes, cheese and various other forms of food. The answers are as follows:

1. *Practical*. While, according to analysis, all the cereals are of about the same nutritive value and while there are plausible reasons for regarding corn as highly economic, at least in America, the fact remains that the housewife, buying at retail, seldom finds offered any preparation of any grain that is not decidedly more expensive than wheat flour. This is true generally even at present, with wheat flour at almost exactly double its normal price.

No cereal fulfills as well as wheat the requirement of consistency. The gluten of wheat allows a porous but consistent loaf or other preparation to be made and no other grain fulfills this requirement to the same practical degree. Corn can be eaten as a breakfast food, a paste, popped, a hard johnny cake or a crumbly cake or bread but it cannot be satisfactorily prepared to rival the customary uses of wheat.

Digestive disturbances, especially diarrhea, are rather frequently ascribable to the use of corn in one form or another. Practically none are encountered after the use

of wheat in ordinary proper forms, unless there is some definite underlying lesion or functional state, which interdicts the use of all cereal food temporarily or which should be controlled by treatment other than dietetic limitation to this degree.

2. *Theoretic.* Recent studies of proteins from the standpoint of their amino-acid components tend to show that the proteid of corn is far inferior to that of wheat and, indeed, to that of most other cereals. It is unnecessary to enter into the details of these studies, as they are well known to those who keep track of the literature and it would occupy too much space to repeat them, especially as the writer is not competent to add to the information on the subject or even to aid in the critical discussion of the subject. It may be pardonable, however, to point out that, whenever wheat has satisfactorily competed with other cereals, it has become the staple; that wheat-eating peoples have generally shown a marked superiority over those whose staple cereal has been rice, oats, barley, rye, corn, etc.

Felon.—It is claimed that a felon or gathering held in ice-cold alcohol for awhile may be cut without pain.—*Exchange.*

Poison Ivy and Oak Poisoning.—Fluid extract *grindelia robusta* applied twice a day for three or four days will usually be found efficacious in relieving the annoying symptoms characteristic of this affection.

Therapy of Ulcus Phagedenicum Tropicum.—Brink, in *Schmidt's Jahrbücher*, implies that salvarsan can cure this affection, but states that pencilling with a solution of sol. arsemealis comp. is a more simple, less dangerous and cheaper remedy.



Picric Acid in War Surgery.—The use of picric acid as a wound antiseptic has already been suggested by several writers and Brown in the *Lancet* (Sept. 2, 1916) gives his experience with it in practice. It may be applied to superficial wounds as a one per cent. solution on gauze; suppurating sinuses may be syringed with a solution of 0.5 to 1 per cent. strength; for suppurating fractures and crushed tissues, arm and leg baths of 0.5 per cent. solution may be employed. One per cent. was found to be too strong for the delicate epithelium of new skin; 0.2 to 0.5 per cent. is preferable. Picric acid kills bacteria without corrosion and prevents suppuration; it stimulates the granulation of tissue; it has marked anodyne properties, rendering the use of morphine or acetylsalicylic acid less frequently necessary; by dispensing with hot fomentations it saves much time; it is less irritative than iodine; it is useful for sterilization of the skin in surgical cases; it shortens the convalescent period. As regards drawbacks, coagulation of the tissues is very slight; poisonous effects in the author's experience were practically *nil*; discoloration of the skin is persistent but purely superficial, and does not extend to the subcutaneous tissues.

Mesothorium Treatment of Eye Diseases.—N. J. Cuperus (*Archives of Ophthalmology*, March, 1917) says that in many cases of eye disease where the usual remedies are without avail, treatment with radium or mesothorium is favorable, particularly in chronic blepharitis, chronic inflammations of the conjunctiva, cornea, iris or vitreous. Vision is not improved in old opacities of the cornea, altho the opaque areas become less dense. The proper moment at which to begin treatment is the

one when nothing further can be accomplished by the usual methods of treatment. One or two treatments are sometimes followed by a surprisingly good result. The treatment should be applied cautiously if the keratitis or iritis is acute and painful. No analgesic action was observed. A rather important point is that even if the eyes are kept quiet during the treatment the application of these remedies is sometimes followed by an unpleasant irritation which may last for months. The writer's method of procedure is to cocaineize the eye and then apply the remedy directly to the cornea for from four to fifteen minutes, while the lids were held apart with the fingers, if an action was desired on the interior of the eye. The length of time depends on the reaction that followed a previous treatment.

Treatment of Pruritus.—E. de Oyarzabal (*Siglo Medico*, October 7, 1916) states that the diet and bowels should be regulated whatever the cause of the pruritus. The clothing and room should be cool. The functioning of the liver and kidneys examined. Menstrual disturbances, uterine lesions, gout, blood diseases, neurasthenia, hysteria, incipient general paresis and tabes, enlarged prostate may be the causes of pruritus. Local treatment is not very promising but where everything else has been of no avail the quartz lamp or the Roentgen rays have frequently succeeded. The author has sometimes obtained good results from venesection followed by injection of saline, withdrawing from 150 to 300 c.c. of blood and injecting a pint or more of saline.

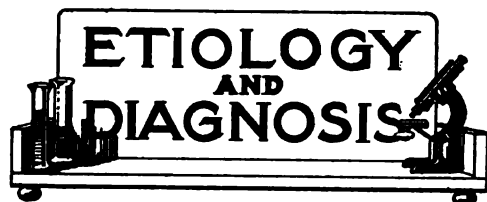
Influence of Drugs on Skin Reactions.—Kolmer, Immerman, Matsunami, and Montgomery (*Journal of Laboratory and Clinical Medicine*, March, 1917) emphasize that physicians have not realized as a rule that the oral administration of certain drugs may influence skin reactions by increasing their degree and severity of producing well marked papular or pustular reactions in the skin of persons who did not react to the injections in preliminary tests. As a result of their investigations they found that iodides,

particularly potassium iodide, influenced the luetin intracutaneous tests to a marked degree. Normal, nonsyphilitic persons, reacting negatively to the luetin test, may show marked reactions when tested after the oral administration of sixty or more grains of potassium iodide. It was noted, however, that the cutaneous tests are not as readily influenced as the intracutaneous. The use of potassium iodide also increased the tuberculin reactions in persons shown to be sensitive. The authors believe that this action of the iodides is responsible for the discrepancies in the results that have been reported concerning the luetin reaction.

Opium in Peritonitis.—Crile (*Therapeutic Gazette*) strongly endorses the use of opium in this condition. He bases this opinion upon the results of clinical experience and the fact that peritonitis is an acute infection, that death is due to exhaustion following the expenditure of energy in the struggle of combating the infection; the destructive effects of resulting acid byproducts; diminished intake of nourishment and insufficient sleep. Crile lays stress upon this latter factor, because in peritonitis there is severe pain, while in the acute types of the disease sleep is rare and disturbed. He therefore advises, for the purpose of diminishing the absorption of toxins, and promoting drainage, an operation under nitrous oxide and local anesthesia combined, with the patient in the Fowler position, followed by physiological rest to the intestine. To promote rest, he advises the free use of opium, emphasizing the point that the dose be graduated by its effect upon the respiratory rate and not by weight in grains, and properly pushed until the respirations are materially reduced in number. Crile declares that laboratory findings have demonstrated that this effect of opium protects the brain, the adrenals and the liver against the damaging effects of the toxins. It also diminishes the need of food, which in turn diminishes metabolism.

Disinfection of Wounds by Ether Solution.—A. Distaso and T. R. Bowen

(*British Medical Journal*, February 24, 1917) were led by the unsatisfactory results from antiseptics and vaccines to try to make use of the well known marked bactericidal powers of fresh, young tissues. This was accomplished by the use of baths or irrigations with a two per cent. solution of ether, which mechanically washed off the superficial organisms and caused very marked stimulation of the formation of new tissues. This plan gave exceedingly favorable results in a number of cases in which it was tried, but it was found that these could be further improved by the firm swabbing of the wounds when dressed in order to remove the pus and to further stimulate the oozing of blood. Under such methods of treatment infected wounds healed much more rapidly than was the case with the usual antiseptic or vaccine treatment.



The Cause of Carcinoma.—Rockey (*Surg., Gynec. and Obst.*, 1916, xxii, 171) proposes the hypothesis that cancer is caused by a defensive process of the tissue-cells to a great variety of irritations; and that there is no specific external cause for cancer. There is a normal antagonism between cells that are of mesoblastic, and those of epiblastic, origin; which prevents them from intermingling under the ordinary circumstances of wound healing.

The defensive reaction to any irritation that falls short of the destruction of cells is an active karyokinesis. The more active this becomes the more nearly the cells approach the embryonal type and become irregular in their mitosis. This irregularity is the result of the struggle for existence, in which they fail to produce perfect cells. This is true both of the epithelial and the connective-tissue cells. Like allies in common defense, these young and actively growing cells lose their normal antagonism for each other and more readily mingle. The young epithelial cells become engulfed in those of the connective tissue; and lose their proper position on the surface. The environment which makes for normal development of the cells is lacking. They belong on the surface; and cannot in the depths of the tissues attain anatomic perfection, and physiologic activity. They retain the excessive karyokinetic tendency of their immediate progenitors; and can only grow and reproduce. This tendency,

which was at first a defense growth against the irritation which destroyed the basement membrane, thus produces cancer.

There can be no single external specific cause, either microbic or protozoan, for cancer, which has its origin in such a variety of irritations as those found in smokers' cancer of the mouth and lip, betel-nut chewers' cancer of the mouth, chimney-sweeps' cancer, and cancer produced by X-ray irritations, slow burns, as those of the abdominal wall in the natives of Thibet; cancer of the stomach following ulcer, or those of the colon and rectum at the dependent portions, where fecal accumulations produce chronic irritations. All such irritations may, when they are of sufficient intensity to destroy the basement membrane, provoke a defensive reaction in the cells, which reduces them to an embryonal form, and karyokinetic activity diminishes their normal antagonism to each other, and thus causes cancer.

Value of Blood-Pressure Observations Made During Surgical Procedures.—In the *Inter. Med. Jour.* for Oct., 1916, Moots states that having made observations and records of the pressure in 98 per cent. of his cases for the past eight years, he has, as a result of his experience alone, come to certain conclusions which he wishes to offer at this time:—

1. The systolic pressure alone is of very slight if any value.
2. The diastolic pressure alone is of much more value than the systolic alone.
3. The pressure-ratio is the essential factor, and offers the earliest danger-signal.
5. There are certain elements in technic which have a marked and constant effect upon the pressures. These are as follows:
 - (a) The psychical or emotional state of the patient.
 - (b) The position of the patient upon the table, the extreme Trendelenburg being the worst.
 - (c) Overdosing by the anesthetist.
 - (d) The amount of traumatism inflicted by the actual operation, such as cutting and tearing the tissues with scissors, the hands, and other dull instruments; the packing of large packs instead of rubber tissue into the abdominal cavity.
 - (e) The preservation of the fluids in the body up to the hour of operation, this being absolutely necessary to maintain the usual pressures.

Cause of Chronic Constipation.—Butler (*Amer. Jour. of Clinical Med.*, Feb., 1917) says that constipation depends upon various causes. It sometimes arises, temporarily, from change of diet, scene or habits, among which may be included anything interfering with the regular performance of defecation; it is common in many diseases; it occurs in a chronic form in chlorotic or dyspeptic girls and young women and in persons of sedentary habits or sluggish constitutions.

As Thompson says, constipation, when it is not dependent upon some gynecological ailment, is generally due to deficient action either of the small intestine or of some part of the large intestine. The former arises from two causes—deficient secretion, and lack of innervation or of muscular action. Altho the constipation arising from deficient secretion is quite distinct from that owing to want of muscular action, many times both causes are present simultaneously.

As deficient secretion in the small intestine may be rooted in some upheaval of the liver, the seeds of constipation may have been sown at the time when the patient was afflicted with a severe form of fever involving this organ—such as the bilious remittent; or, possibly, tropical diarrhea, which is nearly always attended by notable hepatic disturbance. Excessive fecal accumulation and impaction do not exist here, but there is, instead, a sluggish action of the bowels and the patient commonly is obliged to take medicine every four or five days in order to force a movement which, when secured, is dry and only moderate in amount. This is the class of constipation that prevails in the northern states following the poisoning from malaria, while in the South it is common as a result of the diarrhea peculiar to that region.

Etiology of Shell Shock.—After a discussion of the causes contributing to shell shock, Wiltshire (*Lancet*, June 17, 1916) arrives at the following conclusions:—

1. The wounded are practically immune from shell shock, presumably because a wound neutralizes the action of the psychic causes.

2. Exposure and hardship do not predispose to shell shock in troops who are well fed.

3. While it is theoretically possible that physical concussion resulting from a shell explosion might cause shell shock, it is certain that this must be regarded as an extremely rare and unusual cause.

4. Chemical intoxication by gases generated in shell explosions cannot be more than a very exceptional cause.

5. Gradual psychic exhaustion from continued fear is an important disposing cause, particularly in men of neuropathic predisposition. In such subjects it may suffice to cause shell shock *per se*.

6. In the vast majority of cases the exciting cause is some special psychic shock. Horrible sights are the most frequent and potent factor in the production of this shock. Losses and the fright of being buried are also important in this respect. Sounds are comparatively unimportant.

7. A consideration of the causes and frequency of relapses favors an original cause of psychic nature.

8. Any psychic shock or strain may cause a functional neurosis, provided it be of sufficient intensity relative to the nerve resistance of the individual. Such shock or strain need not have any connection with "sex complexes."



Palliative Treatment in Gastrointestinal Disorders.—In discussing the uses of sodium bicarbonate in these disorders Sajous in a recent issue of *N. Y. Med. Jour.* mentions the relief from pain or discomfort arising from delayed digestion in cases of hypochlorhydria, for indigestion expressed by pain at the cardia, eructations, somnolence, low spirits, and irritability of temper, for which the following formula is offered:

℞ Sodii bicarbonatis 3iiss
Infusi gentianæ compositi
(N. F.) 3vi

M. et Sig.: One tablespoonful an hour before meals.

Sajous further states that E. Binet, in similar cases, orders the following formula to be used one hour and one-half hour before the meal, and in severe cases, also one-half hour and one hour after eating:—

℞ Sodii bicarbonatis gr. xii
Magnesii oxidi ponderosi gr. iv
Belladonna foliorum pulveris gr. ¼

Pone in chartulam No. 1.

Relief of the distressing symptoms is obtained by acceleration of gastric motility thru carbon dioxide liberation, thus promoting more thorax admixture of the gastric juice with the food, and a quicker evacuation of the stomach contents.

Treatment of Scarlet Fever.—Kittredge in his interesting article in the *Nat. E. M. A. Quarterly* gives the following treatment:—"My patient is isolated at once; and, as sunlight, fresh air, cleanliness and a proper degree of heat are indispensable factors in the treatment of these cases, I proceed to put my patient in the best room in the house if I can get it. Our aim should be to diminish inflammation and irritation of the skin, keep it warm and try to keep it moist; this we all know will go a long way toward preventing nephritis, and just here prophylaxis is a mighty factor.

"Asclepias has been a good, reliable remedy for this condition. I find it more gentle with children than some of our more powerful diaphoretics. I need hardly say in this assembly, avoid coal tar derivatives and synthetic preparations which irritate the kidneys; but should nephritis arise, however, in spite of our watchfulness and care, I like the soothing effects of tritium or a combination of gelsemium and hydrangea, with a hot-water bottle to the back. For ascites I like apocynum and sometimes elaterium.

"I usually begin my treatment of these cases with a good, generous dose of castor

oil. As a sedative I usually give aconite, as that is the sedative usually indicated in children. To keep the skin moist I give asclepias. For the glandular system I give phytolacca right from the start, in pretty generous doses. For my throat symptoms, where the throat has that highly inflamed, angry red appearance, I use ac. phosphoric (dil.) combined with tr. chloride of iron. I add echinacea to my prescriptions in all septic conditions. As a throat spray I like a mild solution of echinacea, spraying the throat several times daily.

"I consider the diet a very important part of the treatment, with milk as the basis, cereals of which we have a goodly number, toast, toasted crackers, oranges, grapefruit, eggs in some cases, and avoid meats until after the period for kidney complications to arise. Give plenty of water to drink (not iced), and watch your patient get well."

Treatment of Gastritis in Children.—A writer in the June issue of the *Med. Summary* says that a rigid dietary must be mapped out and vigorously enforced. No drinks except those that are perfectly bland and unirritating should be allowed. If the child is bottle-fed, add lime water to the diluted cow's milk or other artificial food. Opium must be given to relieve the pain. He prefers to give the camphorated tincture of opium in four or five-drop doses to a month old infant. If the child is thirsty give it mucilaginous drinks, just a small teaspoonful or two at a time. Stimulants are always indicated in the later stages. He prefers to give the stimulants in the following manner:

R Quinæ sulph.3j
Best whiskey3viij
Aque3viij

M. Sig.: Keep hot and wring cloths out of it and apply them over the breast and stomach of the child.

This should be kept up for hours at a time. By using this application the child gets the benefit of the tonic action of quinine, the stimulating action of the whiskey, and the virtues of hot fomentations. Injections of whiskey into the rectum are often used with benefit, but they cannot be kept up sufficiently long to do the child much good, on account of the irritation to the rectum. In conjunction with the above treatment, inunctions of cod liver oil three or four times a day, have materially helped the case.

Paraffin Treatment of Burns.—Matas (*New Orleans Med. & Surg. Journ.*, April, 1917) in describing the paraffin treatment of burns says it is begun at the first dressing; very exceptionally in septic burns the paraffin is replaced by hot boric fomentations for two days, after two days of paraffin treatment.

Blisters are not interfered with in any way at the first dressing, the paraffin is applied after washing the burn; at the second dressing

the dead layers of skin are cut away. Sloughs usually separate after a few dressings. This is accelerated by applying a layer of jaconet over the cotton and paraffin beneath the cotton and bandage dressing.

Resorcin 1 per cent.
Eucalyptus oil 2 per cent.
Olive oil 5 per cent.
Paraffin soft25 per cent.
Paraffin hard67 per cent.

Melt the hard and soft paraffin and olive oil. Dissolve the resorcin in absolute alcohol (soluble in 2 in 1) add the alcohol resorcin and lastly add the eucalyptus oil when the wax has cooled to about 55° C.

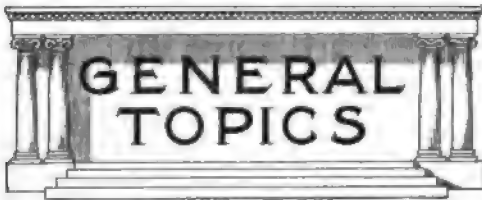
The soothing effect of the mixtures and the immediate cessation of pain has been the most notable and gratifying feature of the treatment. In septic and suppuratory conditions, the dressings should be changed at least once daily, or whenever the secretions tend to accumulate to any notable extent under the wax-like shield. Blistered surfaces and superficial sloughs which do not extend beyond the corium heal with a perfectly smooth surface—leaving no appreciable scar.

Acceleration of Wound Healing After Erysipelas.—Goebel in *Zentralblatt für Chirurgie*, Dec., 1916, refers to the beneficent action of erysipelas on tumors which has led to the toxin therapy of sarcoma (Coley). In civil surgical practice wounds have been seen to heal in a superior manner after erysipelas infection. In the present war the much-dreaded erysipelas, by no means as rare as it ought to be, has been seen to exert this salutary action. The disease sometimes attacks wounds and fistulae which are nearly healed. To explain this fact the author believes that the hardening of the skin as a result of exposure and lack of bathing is unfavorable for infection, while the coddling incidental to sojourn in reserve hospitals has the opposite effect. Despite the high fever which usually accompanies erysipelas the course of the latter is chiefly benign. Instead of an arrest of healing the disease appears to accelerate the latter. Acute inflammation probably causes not only a hyperemizing but a tonic effect. It is hardly conceivable that improvement could be due to lymphstasis. We know that acute exacerbations and irritation can bring about recovery in chronic inflammation. The author will eventually publish cases to illustrate the action of erysipelas as a vulnerary.

Treatment of Stricture of the Deep Urethra.—Wright (*Urologic and Cutaneous Review*, Mar., 1917) says that dilatation can be performed in two ways: either by temporary or continuous pressure. In the temporary method a sound or bougie is passed and allowed to remain in place from a few seconds to several minutes. In the continuous method the bougie is allowed to remain for a number of hours or days. The former method is adaptable to strictures of large calibre, the latter to very narrow stric-

tures. To his mechanical treatment sitz baths should be added. They should be given two or three times daily and should be of from twenty to thirty minutes' duration. After a No. 10 or 12 bougie can be passed without difficulty a bougie or sound need be passed only every four or five days. In traumatic stricture no attempt should be made at dilatation. In all cases the urethra must be kept dilated to its normal size until the scar tissue loses its tendency to shrink.

Treatment of Arteriosclerosis.—Holmes (*Canadian Jour. of Med. and Surg.*, March, 1917) gives as the aims of treatment: 1, To prevent accidents; 2, to maintain circulation; 3, to lower arterial tension. The treatment should be begun early in life. The diet and exercise should be regulated. Milk diet may be necessary. Hot packs may be given in suitable cases. If the patient is an overeater with too much blood, venesection is indicated. In syphilitic arteriosclerosis mercury and large doses of iodides should be employed. For the pain of gangrene morphine may have to be administered. Nitroglycerin stimulates the heart and relaxes the arterioles.



Tincture of Iodine by the Mouth.—It has always been a cause of regret that it was so difficult to find an acceptable mode of administering free iodine internally, and numerous are the preparations that have been proposed for the purpose, some of which act excellently, while others are open to all the objections that are raised against the internal administration of the tincture of iodine. In view of the fact that the physician may be in a position to have no acceptable preparation of iodine available for internal administration while tincture of iodine always is on hand, a note by H. Ewan Waller to *The Prescriber* for April, is of interest, who is enthusiastically in favor of the internal use of tinctura iodi mitis of the British Pharmacopoeia, given in doses of 2 minims three times daily, in peppermint-water.

This preparation, which has the merit of cheapness and is very easy to dispense, is claimed by Waller to be a wonderful tonic for children, especially those of tuberculous tendency, and seems to impart life and vigor and to improve appetite. It is equally effective for adults, the gain of weight in many weakly and debilitated patients being remarkable. Others do not gain weight, still, a sense of wellbeing is developed.

While the objection has been raised that there is danger of producing hyperthyroidism or actual Graves' disease by the use of the tincture of iodine, Waller has witnessed no such result, altho using the remedy in hundreds of cases; indeed, he has found it to be a most valuable agent in the treatment of Graves' disease.

While we believe that the splendid clinical results which are described in this article can be secured with other iodine preparations with less danger of digestive disturbances, yet, we cannot deny that the suggestion is of value under certain circumstances and that it is particularly worthy of a clinical test when for some reason or other the tincture of iodine is the only form in which this drug is available.

It is to be kept in mind, however, that the mild tincture of iodine of the British Pharmacopoeia contains less of the iodine than does the tincture of iodine, U. S. P., the respective formulas being as follows:

Tinctura Iodi Mitis. (British Pharmacopoeia).

Iodine	25 grams
Potassium iodide	25 grams
Distilled water	25 milliliters
Alcohol (90-per cent.), sufficient to produce	1,000 milliliters

or

Tinctura Iodi. (United States Pharmacopoeia).

Iodine	70 grams
Potassium iodide	50 grams
Distilled water	50 milliliters
Alcohol, a sufficient quantity to make	1,000 milliliters

Man's Age-Changes.—A writer in a recent issue of the *Ladies' Home Journal* says that we fail to realize that as we grow older we cannot take care of the same foods, in kind or quantity, that we did when we were younger. Yet few change their diet as years come to them. They have formed habits of appetite and fail to realize that the consuming power of the body is not so great at fifty as it was at thirty. When a man or a woman turns fifty, an age-change has come that must be reckoned with and heeded. The body does not require the same food that it required at thirty; moreover, it cannot consume it. We fail to require as much sleep as we grow older, and the same is true of our food requirements. Many a man (and woman) who has turned fifty is committing slow suicide by not curbing his appetite, whereas he could add ten years to his life if he realized that a man is as old as are his arteries, and his arteries are as old as he eats and drinks. We have got far enough, fortunately, to realize that alcohol is poison to the arteries whether we are young or old: we still have to realize that the same kind and quantity of food are poison at fifty that are food at thirty. The only change that need concern us at age-change relates to the food that we eat: we can go on working and keeping up our enthusiasms and interest: they will freshen us. But we can shorten our lives with the foods that we eat.

American Medicine

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In Advance

Independence Day Sanity.—Despite the irresistible torrent of patriotism rushing thru the country, Independence Day this year was observed with even greater moderation and sanity than ever before. Fifteen years ago more casualties occurred than were caused by battles of the Revolution which made Independence Day an historical event.

No longer are injuries and loss of lives regarded as evidence of national spirit. Noise and riot, fires and firearms do not increase the measure of national pride nor tend to increase the meaning of a significant day. To the minds of those most keenly interested the Fourth of July appeals as a day of rejoicing, consecrated to a re-dedication of citizens to national ideals.

The "safe and sane Fourth" has swept over the nation as a plea for rational and dignified ceremonies upon the day that symbolizes the birth, in safety and sanity, of a Republican form of Government.

It is difficult to realize that on the Fourth of July, 1903, the mode of enjoying a national holiday was such as to result in the death or injury of 4,449 persons and probably many more which were not reported. Hospitals, dispensaries, physicians, firemen, policemen were constantly alert to safeguard life and property. Despite their zeal and enthusiasm the frightful toll was taken. Young America was mildly rioting in the name of Liberty.

Slaughter and flames have given way to pageants, parades, picnics, patriotic assemblages, and organized efforts to establish a semblance of order and sanctity. Cannons, pistols, giant crackers, bombs and fireworks with their appeal to primitive senses are now relegated to a subordinate place. In their stead have developed constructive municipal plans for the education and elevation of citizens.

A New Significance to the Fourth of July.—It is particularly noteworthy that in this year, when the spirit of war is resplendent in wonderful ardor and when souls are fired with basic feelings of earnest sacrifice, the celebration of Independence Day should have been so quietly fervent and calmly ennobling. The deep felt spirit of Independence Day was everywhere manifest in a serious declaration of devotion to this country, in a pledging of allegiance to the flag and the institutions for which it stands. Everywhere there was the recognition of new meaning in an appeal for national solidarity in the face of an international crisis.

Thruout the length and breadth of the land, human life possesses new value. Courage, health and high ideals are appreciated as the rightful basis of true independence. Fourth of July is to be a celebrating of national vitality—a memorial of achievements—a consecration to unity, free-

dom and indomitable high purposes for humanity.

For the first time in the history of the country, hyphenation has not shown its snaky head. All who celebrated were Americans, regardless of their place of birth or ancestry. Fourth of July has been reborn, a truly American institution symbolizing constructive democracy that protects and conserves the best in national idealism. It typifies the harmony of a nation formed from elements originating from every corner of the globe.

It is unlikely that the lapse of years will ever see the chaotic and destructive celebrations which characterized the past generation. In its new interpretation it will have a loftier significance and its spirit will be transformed into patterns of action that will redound to the greater glory and honor of a free and liberty loving nation.

The Prevalence of Cancer and the Need for Early Diagnosis.—That cancer is a widely spread disease is a statement which admits of no denial. That it is increasing among civilized people is also an assertion which may be allowed, altho, probably it is not increasing at the very rapid rate attributed to it by some statisticians. However, the disease is deadly, loathsome and sufficiently prevalent to stamp it as one of the greatest of the menaces of the human race. To check effectually the inroads of cancer would be a work to mark an epoch in the prevention and treatment of disease, while its eradication would surely be hailed as the consummation of science in saving human life. At present, no such end is in view, nor can it be said that it is likely to

be even in the near future. During the past few years the endeavors of the medical profession have been very properly concentrated on the initiation and employment of means calculated to curb the spread of cancer. Even the attainment of this most laudable object is beset with many and diverse difficulties. In order to stay the plague of cancer, several stipulations must be laid down. One point in this connection stands out conspicuously and it is the only one which will be discussed—that, in our existing state of knowledge, an early diagnosis is absolutely necessary to ensure successful treatment.

There is general and almost universal agreement among authorities on the subject that the only logical treatment of the malady is the employment of prompt operative measures. A complete removal of the disease focus is the only method upon which reliance can be placed with any degree of certainty. But, and here is the main stumbling block to successful operation, the complete removal of the disease focus is only possible when the disease is local, when metastasis into distant organs has not already taken place. Consequently, good results from operation hinge entirely upon an early and correct diagnosis.

How are early and correct diagnoses of cancer to be obtained?

Altho in dealing with the question of how to procure an early and satisfactory diagnosis of cancer, ground is being covered which has been traversed frequently within recent years, it is more or less of an essential prelude to the matter in hand, the biopsy of cancer. The conclusion was come to after due deliberation by cancer experts in this country, that the only way by which cancer in its operable stages could be diag-

nosed was by securing the cooperation of the public. Persons suffering from the disease, and especially women, are generally speaking, ignorant of the early symptoms. Sometimes women neglect to seek the advice of a medical man from a false sense of modesty. In the great majority of instances, however, it is ignorance of the manner in which the disease first manifests itself that is responsible for cancer developing into the inoperable stage. A recognition of this fact led many of the leaders in surgery and medicine in America to recommend that a campaign of education be launched for the purpose of providing information as to the early symptoms of cancer. Thus, those in whom such symptoms were present would be given warning that the advice of a skilled medical practitioner was called for, so that, if necessary, operative procedures could be instituted before it was too late.

The conception of this campaign was excellent and in practice, it has justified to a large extent the hopes of its inaugurators.

Naturally, the boards of health throughout the country have taken an active part in the prosecution of this educative campaign. As befits the well earned reputation of the Health Department of New York City, particular activity has been displayed in disseminating literature bearing upon the early diagnosis of cancer and, in fact, all available means have been employed in spreading such knowledge broadcast.

It is absolutely essential that any information given to the public, and particularly on as vital a matter as that of cancer, should be strictly accurate; that is to say, in accordance with the views of those who by research and clinical experience are warranted in speaking with authority. It is evident,

if this rule be not followed, that education in this direction is worse than useless. Recently, the New York Health Department has deviated from this rule and has sent forth written advice concerning the diagnosis of cancer which must be characterized as highly dangerous.

Biopsy of Suspected Cancer Tissue.—

Some six months or so ago, the New York Department of Health announced that it had just completed and put into operation a plan by which the physicians of the city were invited to submit specimens of tissue for microscopic diagnosis. According to the Publicity Bureau of the Department:

"The scheme lends itself particularly to the early diagnosis of superficial and other accessible cancers, the lips, tongue, cervix, breast, etc., but is no less applicable to the investigation of all suspicious lesions from which it is possible to remove small particles of tissue for microscopic examination."

* * * "In these the operation is free from danger and easy of performance, the degree of pain is negligible, and the result of microscopic investigations is practically always such as to determine the diagnosis with scientific exactitude, and frequently is responsible for the institution of timely operative procedures and the saving of life."

Altho, it is a matter of the utmost importance that an early diagnosis of cancer should be made, the plan suggested and put into practice by the New York Health Department is of so dangerous a nature that it is extraordinary it should have ever been fostered by the Department. Our highly esteemed contemporary, the *Medical Record*, rightly, at once in its editorial pages severely criticized the scheme, pointing out that no more efficacious way of favoring

metastasis and of speedily converting an operable into an inoperable cancer than this method could have been thought of.

According to Professor Ewing of Cornell University, writing in the *New York Medical Journal*, July 3, 1915, incision thru the unbroken skin is seldom admissible for the sake of diagnosis. The skin is the chief protective against infection, which when once established in a tumor greatly aggravates the disease. It is especially to be avoided with sarcomas of bones, muscle, and face, tumors of the breast, and in all growths in which incision of the skin involves also incision thru a tumor capsule.

Dr. William Seaman Bainbridge of New York, in a noteworthy paper contributed to the *Medical Record* (April 28, 1917), quoted numerous authorities to show that exploratory excisions for the purpose of diagnosing cancer are, to speak mildly, very risky, and should be done cautiously and in a strictly scientific manner, if at all.

The Perils of Biopsy.—Biopsy when performed under the most favorable conditions, is a useful but by no means sure aid, to the diagnosis of cancer. When, however, not done under such conditions, but in the way approved and recommended by the New York Health Department, the procedure has everything against it and nothing in its favor. As was so ably pointed out in an editorial in the *Medical Record*, Mar. 3, 1917, there is all the difference in the world between biopsy performed in a hospital and the method advised by the Health Commissioner. In the one case, a frozen section is examined while the patient is ready for operation. If the tumor is found to be malignant an operation is forthwith performed. In the other case, a specimen is

excised, sent to the Health Department, a week perhaps of waiting for the report and in preparing for the operation follows, and in the meantime the seeds of metastasis are being disseminated thruout the body. Moreover, and this seems to us a very essential point, is the ordinary medical practitioner qualified to select and cut out a section from a suspected cancer area for diagnostic purposes? It is generally believed that a considerable amount of experience is required to render a man competent to perform this delicate task.

The danger of cutting into a malignant growth is not confined to cancers of the breast, altho the special danger of such a course in this region is universally acknowledged and its results have been shown to be often highly disastrous. Similar and in some instances even greater risks are run by excising sections out of encapsulated tumors and of ulcerated growths in other localities of the body. In short, the accumulated clinical experience of the vast majority of the most skilled surgeons of the world supplies unimpeachable evidence that the plan proposed by the Health Department is not only unscientific but a grave menace to the public health.

The *Medical Record* is in our opinion absolutely right in its editorial statement, that the dangers of incising cancerous tumors far outweigh any possible advantages in the way of diagnosis.

When diagnostic methods of this nature are employed they should be done in hospitals, as a prelude, when cancer is discovered, to an immediate and radical operation, and not in the indiscriminate fashion recommended by our Health Department. We are heartily in favor of an intelligently conducted educative campaign with regard

to cancer, but we are just as enthusiastically in agreement with the *Medical Record* in its campaign against the dangerous and ill-advised scheme of the New York Department of Health.

War Relief.—The American Red Cross has completed its first systematic drive for funds to support its plan of relief. While there has not been a public discussion of the measures which are to be undertaken thru the funds thus raised, it is fair to conjecture that the vast amount of money received will be expended for the relief of Americans and their dependents who are making the greatest sacrifices for their country. The appeal having been based upon this assumption it is not likely that funds will be transferred to the rebuilding of foreign lands which have been devastated in war.

The problem of caring for the families of individuals who have volunteered or have been drafted into service is serious and complicated by the fact that at the present time there is no governmental machinery organized to take cognizance of the particular needs of the situation. The dependents of enlisted men merit every consideration inasmuch as they are sharers of the sacrifice made by the wage earner. The assigned pay and the granting of separation allowances, as provided for by the Canadian Government (*Care of Dependents of Enlisted Men in Canada, United States Department of Labor, Bureau of Publication No. 25 of the Children's Bureau*) have not yet been copied by the United States, altho there is every reason to believe that these merit imitation. By such measures the Gov-

ernment assumes responsibility for the protection of dependents during the period of enlistment of the males in the community and the financial benefits are not dependent upon organized philanthropic societies.

The issuance of life insurance by the Government is under consideration by the United States and should be developed on as sound a policy as may be possible with a view to affording some relief to bereaved families to meet the burdens which death necessarily places upon them.

A large number of patriotic and philanthropic funds will undoubtedly be started with a view to satisfying the particular requirements of specific portions of the community. To obviate the numerous difficulties which must arise and to prevent the duplication of efforts and relief it is important that some centralized type of organization be devised which may render financial assistance to the dependent relatives of men engaged in active service. While the accumulation of funds may be secured thru a large variety of committees, commissions, and societies the machinery for its administration should be under the central Government for purposes of justifying disbursements and auditing accounts. Our type of political organization lends itself to the distribution of labor among state Governments in such a way that an effective machinery may be built up without overtaxing federal departments now struggling with momentous problems of immediate importance.

The vital questions so thoroly discussed in connection with employer's liability laws and systems of working men's compensation should apply in times when the Government virtually becomes the employer of a large proportion of the population and is, in a sense, morally bound to protect the welfare

of those giving service to it. "No good reason exists for failure to recognize the fact that the soldier in the trenches and the civilian worker in a munition plant are on an equality when the question of protection to their dependents is at issue."

Modern warfare calls forth not merely numbers of men but masses of humanity who must be regarded in the sense of co-workers for national supremacy. The ideals of the Red Cross to give succor to the sick and wounded soldiers have been extended to cover relief from the desolating effects of fire, famine and pestilence. Certainly the application of this theory in times of military strife requires that the dictates of humanity be followed with reference to the dependents of enlisted men who are sharers in the dire distress occasioned by military necessity. Famine and pestilence, the support of the maimed, the blind, and the invalids who must unfortunately return from scenes of action will sorely try the courage, strength and cheerfulness of the most patriotic families who have cheerfully and willingly offered their men in defence of national prestige and honor.

The Need for Money.—Vast sums of money will be required to make possible the continuance of numerous institutions which flourished before martial music assumed the characteristics of a prayerful hymn. The efficiency of the nation depends upon safeguarding large funds hitherto available for the support of medical, educational and charitable enterprises. Taxation for the purposes of carrying on the war should not be permitted to interfere with gifts and contributions intended to sustain the constructive and humane institutions that have aided in protecting life and health

during peaceful years. War must not be permitted to tax out of existence the charitable, educational, religious, medical and social societies whose benevolence, industry and intelligent programs have added much to the character, force and efficiency of the nation. Contributions of this nature should be exempt from all taxation levied for governmental support, on the theory that they virtually are being applied to ends that relieve the government of additional costs and increased organization, and save federal and state officers from responsibilities and duties which might overburden existing departments.

In the interests of humanity and of American patriots the constructive and social aspects of the war must not be relegated to a position that insures their embarrassment, injury, or elimination. The backbone of war is built up from the backs of countless families upon whom the brunt of suffering must fall. The dead cannot be taxed; the hopelessly injured are powerless to yield complete service; the disabled are hampered in their earning power. The healthy, active, vigorous men in actual service are making their contribution in personal suffering and deprivation. The civilian population must bear the load and cheerfully submit to the serious strains and stresses made necessary by their participation in the conflict.

It is essential that the United States at war shall recognize the needs of the nation and make adequate and intelligent provision for the protection and physical welfare of those who are fighting the battles on home territory. Women and children must not be penalized for their contribution to national welfare but should be provided for in a broad, comprehensive plan designed

to relieve them from want and unnecessary suffering until the last bugle call has been sounded, the tents are folded, and peace again reigns.

Prohibition as War Legislation.—Prohibition has become a national question. From the standpoint of idealism and national respect sumptuary legislation to curb the appetite of man is a sad commentary upon American intelligence and self-control.

The recent offensive to storm the citadel of John Barleycorn was a flank movement designed to be effective along with the main attack for controlling the food supply. The prohibition forces were halted while the food control troops marched to victory.

Regardless of personal opinion with reference to the necessity for alcoholic beverages, in the face of national emergency consideration must be given to the entire problem to be solved. There is a large food shortage which threatens the welfare of the world. The United States is called upon to supply large quantities of cereals to bolster up the deficiencies existing in the granaries of friendly countries participating in a terrific struggle on sanguinary fields.

Despite the restrictions made necessary thru food regulations to offset crop shortages the belligerent countries have deemed it expedient not to enact prohibition. There has been a curtailment in the production of spirituous liquors and malt beverages containing low percentages of alcohol. It has been recognized as necessary to the scheme of national defence to continue the production of beer, ale, porter and wines in

order to maintain an efficient industrial organization willing and capable of turning out a maximum output. It is not unreasonable to believe that commissions and legislators in these countries have investigated and understand the numerous social and economic conditions related to national organization for military life with regard to the practical problem of prohibition.

If the American barley and rice now utilized in the production of malt liquors were to be shipped abroad, as a result of "bone dry" laws in this country and were used in the manufacture of mild alcoholic beverages in foreign lands there would be practically no saving in the food supply for the nations most interested. The American working man would in a sense be penalized and his sacrifices, for to him it would be a sacrifice, would merely redound to the continued advantage of his foreign co-worker.

The Cereals and Beer Production.—The total amount of grain now consumed in the manufacture of malt liquors is comparatively small, less than 1% of production, and a large proportion of it is later employed for purposes yielding larger supplies of fodder for animals. The question of prohibition is not bound up in alcoholic beverages containing low percentages of alcohol. Cider and grape juice are alcoholic beverages and there are numerous substitute drinks advertised as "soft" which possess more alcohol per ounce than beer, ale or porter. In addition a large variety of patent medicines of the "bracer" type serve to gratify the taste for alcohol despite the aggressive intent of prohibitive legislation.

It is of more than passing interest in connection with the endeavors of this country

to raise large amounts of money to note that malt liquors for the fiscal year 1916 supplied more than \$87,000,000 in internal revenue taxes. Distilled spirits for the same period of time furnished over \$149,000,000. It is poor hygiene to argue in favor of the retention of the production of malt liquor on the basis of revenue returns to the country. It is valuable to contrast the two items to indicate the possibilities of lowering the consumption of distilled liquors and re-educating the alcoholic palate to beverages less harmful to the human machine.

It is undoubtedly true that complete and universal prohibition as a social reform might be a pronounced benefit to the human race.

The effects of prohibition upon crime, disease, pauperism, delinquency, social and economic conditions have been the subject of conjecture for a number of years and statistical information is gradually being accumulated to demonstrate the truth of the *a priori* opinion.

The introduction of "bone dry" laws without the consent of the general public, in the form of legislation imposed from above, would not tend to promote the industrial and social tranquility which is most essential in times of crisis. Viewed from the broad standpoint of governmental efficiency in waging war it is exceedingly questionable whether denying the general public a moderate measure of light alcoholic beverages would promote either the health or the potentialities of the workers. It is exceedingly doubtful whether the saving in food materials on the basis alleged by the advocates of prohibition would have as salutary effect upon industrial workers as

the transformation of the food materials into beer, ale or porter.

In the words of Kennedy Jones, Director of Food Economy in England, May 17, 1917: "If it be found advisable to stop beer altogether—upon which point there is a considerable difference of opinion—it would be simple common sense to allow the workers time to adapt themselves to the change gradually, by a gradual reduction of the supply rather than by checking or stopping the brewing of beer at once. Also it is well to bear in mind that if the worker is not deriving part of his energy, as has been his habit, from beer, he may require more bread, so that practically no actual saving of bread could be effected."

The prohibition of strong spirituous liquors such as whiskey, rum and gin for the period of the war may be desirable from the standpoint of maximum efficiency regardless of all questions of food wastage.

It is time that the advocates of prohibition made a distinction between light and strong alcoholic beverages and directed their energies to the development of a national ideal of temperance and self-restraint. Before they attempt to force in a fanatical way their opinions upon the general working public they should have substantial corroborative evidence that their basic statements and arguments are correct beyond any reasonable doubt.

It must not be forgotten that the general run of Americans are not sots or inebriates or victims of Bacchantic excesses. Consideration must be had for the overwhelmingly large proportion of citizens who are moderate in their alcoholic tastes, self-controlled, and law abiding. The food law of the nation must not be based upon the theory that we are a nation of alcoholics. From

the standpoint of public health it is doubtful whether further food regulations to save the small percentage of food stuffs entering into the manufacture of beer, for example, would have been warranted. The problem of prohibition or temperance merits attention in all its relations to national welfare and should not be regarded merely as a part of a food problem.

War must not serve as an excuse for impulsive, illogical, hysterical legislation. The prohibition rider on the food control bill was parasitic and its enervating influences threatened the life of a necessary enactment in the interest of public health and welfare.

Safeguarding Maternity.—England, France and Germany are already busily engaged in the problems of repopulation. The promotion of marriage, the encouragement of child bearing, the development of institutions for conserving the lives of mothers, for lowering infant mortality, and for fostering the growth and development of children are receiving active attention despite the national efforts to bring the war to an end.

The United States has had presented to it numerous plans for the protection of the civil population and for conserving the strength and promoting the welfare of non-combatants engaged in the promotion of industrial progress. Demonstrations have been made repeatedly of the inadequacy of methods in vogue for giving obstetrical care in rural and urban districts. Dr. Meigs at the last meeting of the American Association of the Study and Prevention of Infant Mortality pointed out the serious conditions

which exist in some of the rural sections of the country. She urged the necessity for systematic efforts to meet the problems of rural obstetrical care in an organized rational manner. The difficulties in urban communities are more easily met but are none the less prominent and deserving of attack.

It is time that a national program for prenatal and maternal care should be instituted under the auspices of some department of the national Government. The Children's Bureau naturally suggests itself as possessing a personnel capable of engineering and supervising a plan, national in scope, but distributed in administration thruout various sections of the country. The prevention of unnecessary maternal deaths from causes due to pregnancy, labor, and puerperal complications would have a material and beneficial effect upon the mortality rate of the country.

A bulletin issued recently by the Children's Bureau of the Department of Labor makes the unequivocal statement that more women 15 to 45 years of age die from conditions connected with childbirth than from any disease except tuberculosis. About 15,000 deaths from maternal causes occur annually in the United States, and the available figures for this country show no decrease in the maternal death rate since 1900.

These 15,000 deaths do not measure the full extent of the waste. They are merely a rough index of unmeasured preventable illness and suffering among mothers. Furthermore, certain diseases of early infancy are closely connected with the health of the baby's mother and the maternity care she has received, and these diseases cause about one-third of all the deaths occurring among babies under one year of age. More

than 75,000 babies die each year from this group of diseases because they do not have a fair start in life.

The life and health of the mother are in every way important to the well-being of her children. Breast feeding thru the greater part of the baby's first year is his chief protection from all diseases, and mothers are much more likely to be able to nurse their babies successfully if they receive proper care before, at, and after childbirth."

Thru the institution of prenatal care many premature births and still births would be prevented. There would be a decline in the mortality rate of the first week and month of life and the infant mortality might be lowered fully fifty per cent. The general advantages accruing from prenatal and maternity care would arise from the fostering of a new spirit of intelligent motherhood with organized assistance for training in parenthood.

The care of expectant mothers is gradually being recognized as the first step in the organization of sound schemes for the reduction of infant mortality. On this basis it is possible to afford hygienic advantages to pregnant women to insure their health and welfare, to provide adequate medical and obstetrical care as occasion arises and to place under supervision mother and child during puerperal convalescence.

Numerous cities in the country under the impetus of private organizations are attempting to foster prenatal work but there is at the present time a marked necessity for establishing a more universal type of organization which will present the subject in its proper proportions to all sections of the country.

The Need for a Central Bureau.—

Obviously the accomplishment of results cannot depend upon a large central bureau located in Washington, but it is possible from this center to radiate necessary information to all parts of the United States in such an effective way as to secure the cooperation of state, county, and municipal authorities in carrying out the suggestions emanating from an authoritative central authority. Programs, guidance, advice, and supervision might be supplied in a coordinating way while the direct management would be vested in special organizations to be developed along state, county or municipal lines.

In view of the seriousness of this problem, as viewed in foreign lands, it is advisable that recognition be given to its full importance in this country today and now. It is a simple matter to build this work upon the foundations already laid in the magnificent institutions devised for combating the infant mortality rate. It represents a legitimate and natural extension of facilities and plans already inaugurated along lines which have been accepted but not fully appreciated save in a few portions of the country. If steps were taken during the summer to develop the essential machinery requisite for prenatal work the autumn would find prenatal clinics and improved obstetrical care established for a large proportion of the expectant mothers thruout the land. There is a distinct need for this development of medical social service and its importance should be realized at once lest, in the stress of military activity, the value of conserving maternal and infant life be forgotten.



in full operation, so that the ranks of medicine may always have recruits. Medical students should be exempt from draft and not accepted for volunteer service."

Will We Learn From Our Allies' Mistakes?

—Inasmuch as many of the problems now confronting the United States are the same as, or very similar to those our Allies had to answer, much can be learned if we are minded to profit from their experiences. This applies with particular force to the medical resources of the country and as the *Boston Medical and Surgical Journal* (July 19, 1917) wisely suggests, if the medical profession, in conducting its part in the present war, is to learn from the mistakes of the English and French to its advantage, it must urge the matter of proper selection of physicians for military service. "Large numbers of doctors will be needed," continues the writer, "not only to care for our own troops, but to fill the vacancies left by the lack of forces among the Allies, not only on the western front but in Russia and other eastern points. To supply her army's needs, France depleted the staffs of her medical schools, her civilian hospitals and laboratories. Those who remained were insufficient to give proper training to the coming medical classes and to afford proper protection to the civilian population. England made the same mistake. She accepted all the physicians who volunteered for the army and later found her medical ranks thinned to an alarming extent. There is today in this country, roughly speaking, one doctor for every 700 of our population. In England there are large sections where there remains only one doctor for every 8,000 population, and France is in a worse plight. Therefore, whether such a system is made into law or not, we must apply to the calling of our medical force the same principles that control the draft of the army. Those that can be spared at home must go, those who are more useful at home should be kept there. Our great city hospitals must not be crippled, and at all costs we must preserve adequate faculties for our medical schools, and keep them

Medical Students Should Be Exempt from Conscription.

—When the United States declared war a good many medical students sought advice as to the advisability of enlisting at once. Unless we are mistaken, the opinion generally expressed was that students attending recognized medical schools, especially those within two years of graduation, should keep to their studies with the idea of becoming full fledged physicians as soon as possible.

Now comes the word that medical students are to be conscripted for ordinary military duty without regard to their nearness of graduation. The Surgeon-General of the U. S. Army, according to newspaper report, has confirmed this altho he is quoted as saying that medical students may be given furloughs or time off to attend their regular didactic courses. Surely this cannot be the final policy of the Government. There is a great shortage of doctors for military service; therefore every young man engaged in the study of medicine should be aided and encouraged in every way to complete his course, with the object of enlisting, as soon as he graduates, in the medical service of the country. On the other hand there is no dearth of men for regular military needs, and the exemption of the few thousand young men now pursuing medical studies would never be felt. At any rate the exemption of medical students from conscription would have no effect worth considering in comparison with the unquestionable benefits that would surely be received from the graduation and prompt addition to the medical resources of the nation of several thousand well educated, well trained and enthusiastic young doctors.

We have previously urged the necessity of conserving and developing our medical resources with every care. Not only do ordinary common sense and foresight dictate that our medical schools of standing should be kept at full efficiency, their teaching staffs in particular preserved against depletion and disorganization, but that all proper

steps should be taken to encourage young men having any inclination in the direction of medicine—and the requisite ability and preliminary education—to commence their studies without delay.

England and France made the grievous error of letting their medical students enlist for immediate service with the result that both nations are suffering severely from a total lack of qualified physicians, not only to fill the places of medical officers killed and wounded or otherwise incapacitated for active service, but to meet the needs of the civilian population. The United States seems strangely loath to give heed to the experiences and mistakes of its Allies, but it is to be hoped that the authorities will let common sense prevail in this matter of medical students, and not sacrifice with wanton disregard of the future, agencies that properly protected and promoted are certain to be of far reaching importance in the days to come.

Handicapping the Practice of Medicine.

—As we go to press our attention is drawn to a law just passed by the New York State Legislature, which with the most laudable intent, bids fair nevertheless to stifle medical progress in an important direction. This law prohibits the advertising of any and all remedies for the treatment of any venereal disease. If this had been made to apply specifically to lay publications no possible exception could be taken, but no such limitation was made, and as a consequence all announcements of new remedies and appliances for the treatment of venereal diseases—gonorrhea and syphilis—will have to be discontinued. The medical profession will be denied any information in their scientific journals as to where they can obtain the newer remedies, apparatus, etc., they need in the prevention and treatment of these diseases that the practitioner so often encounters. When one stops to think how absolutely uncalled for any such restriction is for medical journals which, of course, do not circulate among the lay public, and how it tends to limit all advance in the treatment of a grave class of ailments, indignation is sure to be felt at the loose way in which the law was drawn. It is fortunate such a law was not in effect a few

years back for many physicians of New York would have been denied knowledge that such remedies as protargol, argyrol, cypridol, arheol, santalol, santyl, mercuriol, salvarsan, neosalvarsan and urotropin are of the utmost value in the prevention and treatment of all venereal affections.

While conscious of the handicap such a law offers to medical progress in an important direction, the main thought at the moment is the apparent neglect of the legislative committees of our medical societies to protect the medical profession against manifestly unjust and uncalled for legislation.

Standardization of Antiseptics.—During the past year or two considerable interest has been taken by various scientific workers in the standardization of disinfectants, and an encouraging feature of this interest is to be found in the fact that instead of mere academic discussion, it has been productive of much excellent laboratory research.

Medical men who have followed the more recent developments in intestinal antiseptics, systemic antiseptics and surgical antiseptics, especially as described from time to time in these columns, will be glad to learn that the laboratory research we have frequently referred to as most promising has at last inspired legislative control over the manufacture and sale of all products for which germicidal action is claimed.

To the State of Connecticut is due the credit of initiating this much needed reform and placing the standardization of antiseptics on a basis to insure the protection of the public.

The measure was introduced and carried thru to its passage by Dr. A. E. Austin, of Sound Beach, a member of the State Assembly. It provides that the receptacle, in which disinfectants are sold, shall bear a label stating the quality of the contents on the application of the Rideal-Walker or the hygienic laboratory test. The measure reads:

"The receptacle containing any disinfectant for external use, the phenol coefficient of which can be determined by a bactericidal test, manufactured, sold or offered for sale within the State, shall bear a label showing the carbolic acid coefficient

or relative germicidal value of such preparation as compared with pure carbolic acid. The relative germicidal value of a disinfectant shall be determined by the application of either the Rideal-Walker or the hygienic laboratory method. Any such disinfectant shall be misbranded if the statement contained on the label is false. Any person who shall misbrand any disinfectant within the meaning of this act, or shall sell or offer the same for sale, shall be fined not more than one hundred dollars or imprisoned not more than sixty days, or both."

This act will take effect August 1, 1917.

It is with much satisfaction that we note this progressive step by the State of Connecticut, for as we have pointed out on repeated occasions the benefits to the people of statutory laws establishing definite standards for all disinfectants, are bound to be far reaching. The possibilities in the direction of economy are obviously very great, but it is the protection afforded by the elimination of worthless or inefficient disinfectants—with their tendency to establish a false sense of security—that gives this new measure its chief importance.

An Emergency Ration.—The problem of rationing the soldier is of the utmost importance not merely for the purpose of preserving his physical health but of conserving his military effectiveness. Regardless of what the civil population subsists upon, the rationing of the soldier must not be reduced so as to curtail his food requirements.

It often times becomes necessary to send in advance scouting parties for whom adequate food supplies cannot be prepared to be carried by them. To meet such military exigencies an emergency ration is essential.

As Vedder has pointed out in the *Military Surgeon*, June, 1917, an emergency ration must be balanced and possess a reasonable energy value and tissue building power. Palatability must not be sacrificed. Its bulk must be minimal in order to prevent the ration from serving as a drag upon the soldier, already weighed down by his essential military appurtenances. The food must be of such a character that it will not readily deteriorate, while at the same

time it must be cheap and readily purchasable.

Vedder has suggested as an emergency ration, ten ounces of hardtack and six ounces of sweet chocolate. The total weight of the ration is one pound, while it supplies approximately 2,100 calories of which 180 calories arise from protein sources. A man resting in bed requires 1,800 calories per day to satisfy the normal heat and energy requirements of bodily function. According to Chittenden, on a low protein diet, 250 calories from protein are provided with a total of 2,854 calories for the 24 hours. The haversack ration as at present constituted supplies approximately 4,500 calories per day with 460 calories arising from protein elements. This ration naturally provides the due and proper amount indicated for soldiers engaged in hard work.

The emergency ration suggested is not liberal in character and in fact materially reduces the total food required for the soldier, but this is merely for emergent purposes and should not actually interfere to a great extent with the physical health of the consumer providing that it is utilized merely in emergencies. It is patent that the bulk is not excessive and that the foods suggested are cheap, generally available, palatable and resistant to deterioration. There is a reasonable distribution of protein, fats and carbohydrates which maintains the balance of the ration while its general digestibility is beyond question. While vitamins form an essential part of foods to be supplied for long periods of times the low vitamin content of the ration is a negligible element considering that the ration is designed for very temporary occasional use. Under the circumstances the suggested ration should meet with favor and at least be placed on trial for the purpose indicated.

No military problem is of greater significance and importance than the complex and serious questions involved in keeping the lines of communication open so that the stomach of the soldier may receive the comfort and aid which are so essential for his welfare. Provision must always be made for the breaking down of a system, no matter how perfect it may be theoretically. To meet such contingencies the haversack ration has been devised, but this needs to be supplemented by a food which is practical, nutritious and digestible and that

may be carried for long periods of time without undergoing the deterioration to which the haversack ration is subject.

The general food value of sweet chocolate has not been thoroughly appreciated. The fact that six ounces of sweet chocolate provides 823 calories attests its high nutritive value and recommends it as a valuable food-stuff for the service of the civil population as well as those engaged in military duties. To be sure hardtack requires mastication, but hunger provides sufficient impetus to guarantee that it will be properly prepared for the action of the digestive fluids. The high carbohydrate content makes thoro insalivation of pronounced value as the first stage in its digestion.

Taking it all in all this combination of hardtack and sweet chocolate commends itself as being particularly well adapted to the needs of the soldier and the requirements of an emergency ration.

A Worthy Charity.—Latest word from Belgium indicates that the people of this poor, stricken land are suffering more than ever from privation and disease. The statement comes from reliable authority that while in the beginning about one-third of the population were forced to accept charity, today, so much worse are existing conditions, over two-thirds of the people have exhausted all their resources and become dependents. A particularly pitiable spectacle is presented by the little children, who from lack of proper nourishment, are rapidly falling prey to many diseases, notably tuberculosis. Profoundly moved by the distress of these little ones, the Queen of Belgium with the aid of philanthropic friends has organized what is called L'Oeuvre du Lait, a society, the purpose of which is to provide milk for the weakened and badly nourished children of Belgium.

L'Oeuvre du Lait has a group of cottages and buildings at Schevening in Holland, and takes care of the destitute Belgian children of refugees who are not able to care for them or who have died during their long exile. Its principal object, however, is to send money to its branches in Belgium with which to buy milch-cows or milk for their two distributing stations at Contich and

Malines. It also buys cows in Holland to send over to Belgium and this is done under the protection of the Dutch authorities who see to it that they are regarded as property of a beneficent organization with Dutch connections and hence immune from seizure. A great deal of good has been done and heretofore the work has been supported by rich Belgians whose resources are now exhausted, tho the need is greater and the little petitioners are daily increasing in numbers.

It is planned therefore, to organize a committee in the United States to represent the L'Oeuvre du Lait, and among those who have been appointed are the following: Hon. Henry van Dyke, D. C. L., Honorary Chairman; Pierre Mali, Consul-General of Belgium; Right Rev. Thomas J. Shahan, Rector of the Catholic University of America, Washington, D. C.; Rev. W. I. Manning, D. D., Rector of Trinity Church, New York; Rev. Charles P. Fagnan, D. D., Professor at Union Presbyterian Seminary, New York; Rev. Joseph Stillemans, President Belgian Relief Fund, New York City; Dr. William Seaman Bainbridge of New York City and several others to be announced later. The plan is to enlist the aid of the American people, the children especially, for this noble work for the Belgian babies.

In our next issue we expect to outline a plan whereby the physicians of the country can give valuable assistance in promoting this most worthy enterprise. The need of the little ones of Belgium will appeal especially to medical men, who realize the need for good milk, and we believe American doctors will welcome an opportunity to develop the proposed "Milk Army" for Belgian children.

Water for Children.—Whenever it is necessary to restrict the amount of water taken by a sick child, (*Nursing Times*) it is better to serve it in a small glass and permit him to drain it, rather than offer a large glass filled with water, from which he is allowed only a few swallows. The small glass adds to the child's contentment, while the larger glass and its contents serve as a "teaser."



FEMALE CHASTITY; ITS PSYCHOLOGY AND EUGENICS.

BY

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The emotion of female chastity may be traced to two sources, to a manifest, historical, sociological, economic experience, and to a latent, invisible, fundamental, psychical, eugenic, racial need or group-instinct. Both causal constituents are teleological in nature and mostly hidden from view. The sociological ingredient requires an elaborate historical study of the evolution of marriage to unveil the ultimate goal of man's matrimonial relations. To fathom the eugenic antecedent and to uncover the hidden racial need, psychology, which is concerned with the laws of human thinking, feeling, and conduct, must penetrate into the dark, inaccessible, unknown subsoil of consciousness and lay bare the most hidden nooks and corners of the racial soul. By revealing the mechanism of individual thought and the workings of the racial mind, psychology furnishes a clear insight into the individual as well as into the aggregate human soul.

By the study of the unconscious, which represents the universal, psychology unfolds the remote motives underlying human conduct and uncovers its psychical

roots. By the lucid interpretation of his reveries, visions, imaginations, and dreams, psychology is able to read the secret unconscious wishes, yearnings, and longings of the individual, from his infancy to advanced age. By the penetrative study of the myths, rituals, symbols, creeds, beliefs, customs, manners, and practices found among distant races, nations, tribes, clans, and groups, the psychology of the unconscious furnishes the means of fathoming the workings of the race from its infancy, at the dawn of human understanding, down to the present high state of culture. The psychological studies lay bare the aspirations, longings, yearnings, and strivings of mankind, be they ever so hidden from view, and reveal the motives at the roots of the strange customs, rules, and laws of primitive tribes, clans, and groups.

One of the most perplexing phenomena of human affairs is the moral history of mankind from the prehuman stage to the present time. To solve this problem, the new psychology of the unconscious approaches the study of this history, follows the trails thru the intricacies behind the strange rules of man's chastity and unveils its reasons and motives.

The discrepancy between the laxity of male chastity and the general universal demand for strict female purity is one of the unsolved problems of moral history which

has engaged the attention of the thinkers of ages. Different explanations have been given at different times. In modern times the radicals, the free-love advocates, the feminists are always ready with the explanation that the tyranny of man-made laws has dictated this enslavement of womankind. Yet the least reflection over the matter will reveal the fallacy of this assertion. If men really were such born amorists or varietists, as claimed by the radical reformers, they must have been perfect idiots to promulgate the very laws that must necessarily interfere with their own interests. The stereotype cry of "man's inhumanity to woman," this prate of "man's brutality to the female of his sex" reveals a faulty power of observation of human affairs¹ as

¹ The feminist doctrine of an antagonism between the male and female within the human family is given the lie at the least observation of human conduct. On a moonlight stroll thru the parks or on an excursion boat to any summer resort the pairs lying in each others arms, hugging and cuddling each other, are surely not engaged in fighting out duels. Every son, from infancy to advanced age is surely loving his mother not less than his father. Sisters do not quarrel with their brothers more than with each other, and a father is no less solicitous of the future of the welfare of his daughter than that of his son. If parents ever show any partiality at all in their affections to their children, it is surely the female child who receives the greater indulgence from the father and the male child from the mother. Where is then the duel of the sexes?

That the modern luxurious mode of living has forced the female into economic competition with the male, making it harder for him to found a home and a family hearth, is deplored by sensible women and men alike. Only the sour, shallow, garrulous feminist can see in this economic competition a natural struggle between the masculine and feminine elements. If a duel between the two sexes ever existed, if misandry or misogyny ever dwelt in the human heart for any period in the history of mankind, the human race would have disappeared long ago. No normal man fancies intercourse with a displeased or even indifferent woman, nor does she willingly submit if she hates the man. With all animals pairing is impossible without the consent of the female, and this is never accorded until she desires that it should take place.

well as a complete ignorance of biology and of the laws of evolution. Any serious antagonism between the male and female of any species will impair the survival value of this species in its struggle for existence, and such species would disappear in a comparatively short time.

The insinuation that man-made laws have dictated general chastity in women betrays not only a complete ignorance of the motives behind these laws but an absence of all logical thinking. If men are really brutal and inhuman towards the sex of their mothers, sisters, wives, and daughters, they are not such idiots as to enact laws, depriving themselves the means of their own enjoyment. No male can give free vent to his own desires, if the female is to remain chaste. Female chastity is the very thing which absolutely destroys the possibility of satisfying male lust. An unchaste male varietist needs an unchaste female partner. If all women, without exception were chaste, the male varietist would be condemned to enforced chastity. The sensual, egotistic man may be interested in the purity of his own consort, but it is to his interest that all other women should be varietists, *i. e.*, women of a prostitute character. Rules to restrict the erotic freedom of the unmarried female is hence surely antagonistic to male sensuality.

The best proof that lust in men requires lewdness in women, and that sensual men would be the very first to abrogate all restrictive laws against female erotic freedom is the onslaught sensuality is making on general chastity in the last few decades. Not only the feministic viragos and the radical varietists, with their Dyonisiac souls, who apotheosize lasciviousness and glorify sexuality, never freeing themselves from its bonds, and with whom every

thing in life assumes a genital orientation, but even many pseudo-scientists in the medical ranks, with their glorification of sexuality, are constantly intent upon the vandalistic invasion of the home and the family. Under the guise of preaching scientific hygiene, they are making every effort to tear down the protective wall generations have erected around the family. With their vapid reasoning they seek to remove the obstacles chaste women have laid in the way of those who would assault female chastity.

These fame-seeking pseudo-altruists, concealing their egotism under the cloak of scientific pursuits, seriously announce to the world that polygyny and polyandry or promiscuity is the normal sex-expression in man, and that monogamy which is natural in the wolf and the wild-cat is artificial in man. Not content of counselling their sensual patients to drown their exaggerated lechery in the debauchery with meretricious venery, they exert all their faculties to pulling down general female chastity, the only obstacle to their indulgence, to the mire of general libertinism. They are ever intent upon the dethronement of ethics and the instatement of the worship of sensuality. With all the sophistry at their command they try to prove the absolute necessity of free sensual indulgence for men and women.¹

These pseudo-teachers, together with their admirers, adherents, and readers who subscribe to the doctrine of man's only aim in life to be to live for his senses, seek to crucify on the cross of sensuality all those who see in life something more than lust and the indulgence of the senses. With malicious innuendoes and shameful insinuations they seek to frighten to silence their opposers by belittling and ridiculing them or by ignoring them altogether. In default of logical refutation they dangle before the eyes of their honest opponents the ominous word "impotence," as if a real thinker could ever be frightened by such a bugaboo. Impotence is not considered such a calamity by the genuine scientific investigator. Where there is no need, there is no want. Impotence provokes ridicule in the primitive man with his primitive emotions. The singular over-valuation of the primitive faculty of impregnation is only found in those living a life of the senses. Only such individuals consider exaggerated potency a blessing. Men of quality have other ideals in life.¹ Cultural influences weaken and disturb both voluptas and libido. The superior man's vital energy, says Schwartz (O. L. Gen. Typ. Superior Men) is largely directed into the channels of intellectual and moral expansion or creation, he is not so well adapted to procreative activity. To

¹To superior men, such as explorers, extensive travelers, sea-faring men, great scientists on their trips for discoveries, far away from their homes and families, who have a natural abhorrence against illegal venery, exaggerated sex-need would constitute a veritable curse. For them impotence of voluptas, or male frigidity, is a real blessing, and the diminished sex-urge is a *conditio sine qua non*. He who needs five steaks for his dinner to satisfy his hunger cannot consider himself blessed by nature. At periods of food scarcity such an exaggerated food requirement may become a real curse. The sexual glutton does not fare any better where femininity is at a premium.

¹These graphomaniacs and dabblers in debauchery by word of mouth and script, attempt to cover their superficiality and ignorance with the coverlet of sexology. Their lack of reverence for the logic of history and the judgment of ethics is drowned by the noise and clamor they make about their own doings and merits. Their intellectual sterility and snobbism is only excelled by their verbosity of self-praise and by the inflated phrasology of their exaggerated vanity. Still these verbose writers can count on a large following which will bestow profound veneration and high praise upon their most immoral advices.

the sense of continence and chastity we are indebted for the first germs of sexual inhibitions. Only for the degenerate sensualist, marching in the grandiloquent garb of sexology, to whom the pivot of man's life is yielding to the pleasures of the senses and appetites, any impediment to sensual indulgence, such as impotency, is the greatest calamity of his life. Any outside obstacle that interferes with his indulgence, such as female chastity, is considered a tyranny that must be removed. The pseudo-reformer and his ignorant votaries who mistake his vagaries for precious revelations and profound intuitions and who become enthusiastic over deceptive dazzling appearances and imitations of truth and goodness, demand therefore the single moral standard for both sexes. But, contrary to the genuine altruist who also makes this demand, the sex-parasites do not demand the same sexual purity of men as it is required from women, their wish is that women be granted the same right to sexual laxity and licentiousness as is tacitly accorded to men.

Another reason given for the double standard of sexual morality is the different intensity of the sex-urge in the two sexes. It is gratuitously assumed that the gratification of his sensual desires is essential to male health, while the sensual impulse of woman is insignificant and does not require indulgence. This doctrine has been exploded in recent years mostly by the female medical and sociological writers who are the best judges of female emotions. These writers have conclusively demonstrated that there is scarcely any difference between the male and female voluptas, or sex-urge. The stress of sex is far from being peculiar to the male sex, says Grete Meisel-Hess. (Sexual

Crises). Such opinions of scientific female investigators who know best the sex impulses and emotions of their own sex ought to carry conviction even to the obtuse and oppositionally oriented minds. Still the dogmatic "female frigidity" and the self-important, grandiloquent, sonorous talk about the hygienic necessity of the male are met with in the writings even of men who make claim upon scientific attainments and who are constantly conferring upon themselves the high-sounding title of sociologists. These men do not wish to be convinced even by the greatest female scientists. They are defending a subconscious desire. The dogma of female frigidity and male necessity is preached to mask subconscious appetites under the beauteous name of hygiene.

If there is no essential difference in the sex-urge of the two sexes, there must be another reason for the double standard of sex morality. The basis for this standard must have a higher social significance otherwise it could not have been so universal. If the wife is among all tribes, with very few exceptions, held to a much higher degree of purity, her chastity must be of a real indestructible, permanent social value. Already at the dawn of civilization great value has been laid upon female purity. Agamemnon¹ vouches with an oath for the chastity of Briseis. Ulysses² puts to death all the female slaves who were guilty of in-chastity with the wooers of his wife. Among the ancient Teutons, so Tacitus tells us, the unchaste female was driven out naked from the village. To avenge the

¹ *Iliad* IX. 135, "Moreover a great oath shall I swear, never her couch to have ascended nor mixed with her as is custom among humans, men with women."

² *Odyssey* XXI. 464, "Telemachos puts to death all the women who shared their couches with the wooers of his mother."

violation of a girl's chastity Rome rose in its might, banished its kings, and established a republic. A few centuries later, for a similar offence, Rome rose again and drove out the ten tyrants.

In the oldest human codes rules and regulations are laid down for safeguarding the purity of the wife. The Hammurabi code¹ as well as the Old Testament² put the highest penalty, that of death, on the wife's in chastity. The interpretation given by the radicals that these laws were men's work to enslave women does not hold logical scrutiny. For the male seducer was also put to death, and it is surely not in men's interest to punish the man with the same severity. Hence these laws can only have been promulgated to safeguard the sanctity of marriage. About the chastity of the unmarried girl the Hammurabi code maintains complete silence and the Bible only imposes a small fine upon the seducer (Deut. XXII. 8). This diversity of the law in regard to the married and unmarried female plainly shows that it was the purity of marriage that dictated these laws and not man's sensuality.

A glance at the history of marriage shows that chastity is due to economic racial evolution and that rational social ethics and moral precepts invariably enshrine practical hygienic and eugenic counsels.

¹ Hammurabi code, dated about 2250 B. C., §129 reads: If any man's wife is found lying with another man they shall both be bound and thrown into the water.

§ 130 reads: If any one forces the betrothed of another who has not yet known a man and is still living in her father's house—if he is found lying with her he shall be put to death, but the woman shall be guiltless.

² Lev. XXII. 10, Deut. XXII. 22, reads: If a man be found lying with a woman, married to a husband, then they shall both of them die. Deut. XXII. 25, reads: If a man find a betrothed damsel in the field and the man force her and lie with her, then the man only that lay with her shall die.

In the pre-human period when socialized herd-life was yet unknown the semi-human creatures, in their undifferentiated hordes, must have lived in pairs in strict monogamy. Judging by analogy from the animal kingdom, only under strict monogamy could the pre-humans have survived in the struggle for existence.¹

In animals whose young are not easily provided for such as the fox, eagle, sparrow, pigeon, stork, etc., the males remain attached to the females they have secured at the first period of oestrus, even after the time of propagation has passed, provide mutually for their offspring till the latter can provide for themselves, and, at each succeeding period of rut, yield again to love and never seek a new mate till the old one dies. Wolves consort even for life. In case of death the survivor remains alone, (*vide* Love, by B. S. Talmey, p. 126).

Now among all animals the period of maternal feeding and care is almost the longest in man. The helplessness of the human infant is unique among all crea-

¹ Herd-life, or gregariousness, shows three types, the aggressive, defensive, and the socialized type, or the pack, the flock, and the hive. The wolf is united in packs for attack, the sheep in flocks for defence, and the bee in hives for all the activities and feelings of its life. In the pre-human period, the ancestors of the race lived in solitary pairs, or the different pairs, like the wolves, were united in undifferentiated hordes formed for attack and defence. Organized life, as in the hive or in the ants' nest could not have existed or it would have remained stationary. In the perfect organized society, as in the hive, no initiative is left to the individual member. Every individual works for the organism only. The hive is everything, the individual nothing. In such a society there is no room for variation or the sport, hence no progress. Each member has its allotted work to perform, no more nor less. Evolution is at a stand-still. The ants' organization of the time of Solomon (Prov. VI. 6-8), remained stationary to the present day. Under a perfect socialization of society, as demanded by the radicals, evolution will surely cease, and progress will come to a stand-still, as in the ants' nest or in the hive.

tures. The new born baby is devoid of nearly all instinctive capacities save of the intake and assimilation of food. It is unable to stand and wander in search of food. It is practically blind and deaf. It is perfectly naked, without fur or feathers, and yet injured by the least draught. It is unable to fast longer than a few hours. In short the human infant is the most complete picture of helpless dependence. Hence without the help and strength of fatherhood, afforded to motherhood, the human race could not have survived the pre-human stage. The length and feebleness of human infancy required a union of male and female of considerable duration. By the time the last child was able to emancipate itself from parental protection, the period of sexual activity had been passed. Permanent mating is a natural phenomenon in man. All the ravings of the free-love advocates to the contrary notwithstanding, man belongs to the monogamic animals.¹ Only the monogamic pre-humans could survive in the struggle for existence, the varietist succumbed and disappeared.

At a later period, when herd-life among men became more socialized, and the males had the responsibility to procure food and protection to the entire herd, the individual father was released from such responsibility and collective responsibility took its place. Monogamic pairing lost its *raison d'être*, and promiscuity is the result. In this state of marriage relations were still the Britons

at the beginning of their history. (Vide Caesar, bell. gal. V. 14).

In the second stage (vide Love, p. 385), the irregular promiscuous state was abandoned. A taboo arose against promiscuity which even these primitive men found to be undesirable and unsuitable for a healthy offspring. Marriage between parents and children which had a deleterious effect upon the offspring was declared immoral. But intermarriage between brothers and sisters was still the rule. This consanguineous union was tabooed in the following stage.

The keen observation of the primitive man recognized the danger of inbreeding. The third stage is distinguished by the prohibition of incest. Intermarriage between brothers and sisters was also decreed immoral. Since the relationship¹ within the clan was uncertain, intermarriage in the same clan was excluded. Man became exogamic. Still even in this punaluan family, a group of men were conjointly married to a group of women. Adultery is naturally not yet known. The children know their mothers and their mothers' brothers only. Inheritance can thus follow in the female line only, and matriarchate prevails.

In the fourth stage communal marriage is replaced by the pairing family, without exclusive cohabitation, for economic reasons. At this period the first traces of the art of taming animals and of breeding herds can be discovered. With the abundance of food, the male comes into ascend-

¹ Some superficial observers maintain that the man is naturally a polygamist, while the woman a monogamist. This differentiation in the nature of the two sexes of one and the same species runs counter to all genetic laws. The female of every animal species is somewhat monogamic. Once impregnated, she does not admit any other male. The reason for it will be found later on in this essay.

¹ The natural consequence of the consanguineous union was physical and mental degeneration. Some females once in awhile have had sex relations with males of neighboring clans and gave birth to physically and mentally stronger offspring. When this was noticed by the elders, exogamy, or marriage outside of one's clan was decreed (vide Love p. 386, footnote).

ency and changes communism into individualism. Inheritance is changed into the male line.

This change of descent from the female into the male line leads to the fifth mode of matrimonial relations, the patriarchal family of the Bible. Inheritance in the male line requires absolute certainty of fatherhood. It was of the greatest importance to the mother and her children that the father should know his own children. The strictest fidelity of the wife is hence of the greatest social significance. Only those females who by nature were strictly monogamous left descendants. The offspring of the female varietist was neglected by the doubting father and, in conformity to the law of Darwin, disappeared.

The severe punishment inflicted upon the wife and her seducer was hence dictated in the interest of wifeness and offspring, not in the interest of purity at all. The two codes and all others following them up to the present day are more or less silent on the chastity of the unmarried female. The violation of unmarried chastity is not punished by codified law but by custom where woman herself reigns supreme. Men are more or less indifferent towards the unmarried offender.

It is the respectable woman who avoids contact with any female offender. Where adultery is prohibited it is to the interest of the wife—not of the husband, as the feminist would like us to believe—to place obstacles into the path of the husband in his hunt for extramatrimonial indulgence, and the best obstacle is strict female chastity of all women, the unmarried included.¹

The standard of the chastity of the unmarried female is hence a creation of woman in the interest of woman.

Thus two laws have been instrumental in the creation of female chastity. The law of inheritance, promulgated by the men, has dictated the wife's purity, and the law of obstacles, edicted by women thru custom, created the chastity of the unmarried female. The original motive underlying the moral standard of sex is hence accidental, external, founded upon certain economic laws and has nothing to do with man's nature as such. In a society where inheritance would be abolished, as some radicals demand, there would be no necessity for the wife's purity, and female chastity would lose its *raison d'être*.

Still there is another reason, a human reason, for the demand of female chastity. The ancient philosophers who maintained that the sentiment of female purity was an innate instinct were not so far away from the truth. The only mistake they made was to overlook the fact that the same sentiment, in a somewhat lesser degree, also dwells in the male soul.

The demand for female chastity is in a certain way instinctive, transcendental, and man acted accordingly without knowing the "why," just as the nomad Arab, in spite of his ignorance of the principle of segregation, nevertheless reckoned with this phenomenon in breeding his horses. Men and women harbor in their subconscious souls a demand for female chastity, without knowing the ethical "why." It is based upon

terest of womanhood that this law should remain on the statute-books, with the Supreme Court interpretation given to it. If it opens the doors wide to blackmailers, the greater will it serve as an obstacle. The law has in practice very little to do with white slavery. For all practical purposes white slavery only exists in the imagination of fiction writers.

¹ The Mann white slavery act has for this reason the greatest support from the womanhood of the entire country. It serves as one of the obstacles in the path of extramatrimonial indulgence by the male. It is hence in the in-

one of the psychical instincts, serving a biological aim. It is a part of life-force itself. The digger-wasp, in paralyzing with its well aimed sting the caterpillar, is also ignorant of the "why" for its act, still the existence of its species depends upon this very act. Automatic behavior almost invariably tends toward an aim *a priori* unknown to the agent. The demand for female purity is also such an automatic behavior. It is an emanation of man's aspiration for the blood-purity of the race which seems to be ingrained in the heart of humanity.

There is scarcely a group, clan, tribe, or nation which does not show a strong desire to preserve its identity and purity. The severest persecutions of the Jews for the last two thousand years could not induce them to give up their identity. Wherever we observe life, from the hyphomycetes to the noble horse, says Chamberlain (the foundations of the nineteenth century), we see the importance of race. Free crossing obliterates character, says Darwin (Plants and Animals under Domestication.) Crossing ruins the race, and the guiding principle of every race is the preservation of its identity. No noble race carelessly suffers an extensive mixture of its blood. The mestizo is seldom welcome even by the lowest tribes.¹ They countenance with abhorrence the mixture of blood even with the more advanced races. The human race in all its branches, says Gobineau, has a secret repulsion from the crossing of blood, a repulsion which in many branches is invincible. Even those who most completely

shake off the yoke of this idea cannot get rid of the few last traces of it.

The demand for blood purity is also found in the smallest human group, the family. Here the aversion extends not only against members of alien races but also against individuals of the same race. Thru the entire human history, from Abraham, in the choice of his son's wife, to the present custom of royal houses not to marry outside of their caste, noble families have been intent upon barring out blood chaos from their midst. When nobility made intermarriage with the plebeian a criminal act it simply aimed at caste purity.

This intent upon blood purity lies behind the general demand for female chastity. Sexual anarchy begets blood chaos. The violation of the chastity even of the unmarried female has serious biological consequences, even if no pregnancy ensued. Her transgression creates a certain blood chaos in her future offspring. The absorbed sperma leaves an indelible impression upon the woman.¹ It impregnates the entire woman, even when it fails to impregnate any of her ova. There are many traits within the animal body which do not men-

¹ The experiments of Waldstein and Ekler (*Archive f. Kriminalanthropologie und Kriminalistik*, Vol. LVI. p. 364), have shown that every pairing, ending in male ejaculation within the vagina, causes a certain saturation of the female blood with a substance, owing its origin within the male body. This substance exercises a certain change in the female blood. The male sperma within the female organism represents a foreign body in the sense of Abderhalden. The blood of a rabbit, 24 hours after copulation, possesses the quality of dialyzation upon testicular tissue. This Abderhalden reaction is positive after every copulation, no matter whether fertilization has taken place or not. Thus a part of the male circulates within the blood of the female after any copulation.

This fact would explain telegony, why after a man's death a woman sometimes bears children to another man who resemble the first husband. These observations have been made time and again and cannot apodictically be denied.

¹ The anti-Japanese laws in the western states of our country are not all based upon economic considerations; they mostly emanate from the general repugnance against hybridization even with a noble race as the Japanese are supposed to be.

delize. These traits are not bound up by the chromosomes and their determiners but are affected by the entire animal, and are hence influenced by the blood infection thru the absorbed sperma.

Telegony is thus not at variance with the established laws of genetics. The fact of telegony has been observed long ago by careful animal breeders. Most of the geneticists do not believe in the evidence of telegony because, they think, it is contrary to the laws of genetics. But all features of the body do not belong to these inheritable traits which are located in the chromosomes and thus subject to the permanence of the unit-characters. Not all traits mendelize even in the animal. Besides this there is some difference between man and animal. An analogy cannot always be taken from the plant and animal kingdoms. Color of skin, hair, and eyes is a unit character in the animal, in man the mulatto is a blend. Harmony always reigns in the color of the eyes and hair in the animal, in man the Celtic girl's beauty reveals often black hair and light eyes.¹ Telegony is thus in no way in serious conflict with the laws of genetics. Breeders have found by experience that a female, once mated to a male of a different breed, is ever afterwards, for breeding purposes, a cross-bred animal. The first mating exerts a permanent influence upon the female, tending to assert itself in all future offspring.² The

liquid secreted by the testicles, when it reaches the female genital system, is absorbed there and has the same effect upon the female organism, as any other vaccine has upon the blood, when used for the purpose of creating permanent immunity. The testicular secretion effects a permanent impregnation of the female. The sperma affects not only the soma but also the female germ-plasma. The intraovarian, unripe ovules are more or less modified. In this way the testicular secretion of every male leaves its imprint upon the woman and her ova and exercises its influence upon the morphology of the offspring by other mates.

The consorting of several men with one woman creates, therefore, in her a certain blood chaos. This is the reason why Solon already about 500 B. C. started the present system of commercialized venery. He wished to protect the home from the infusion of strange blood of sensualists. The same reason of the permanent impression left upon the woman by any previous male is at the basis of the resentment of the esthetic, refined man, who really gives up his soul to the wife of his choice and mother of his children, against the prematrimonial indiscretions of his wife.

Monogamy is hence not a conventional fiction only and virginity is not at all a social institution, adapted to the average type. The man of fastidious taste expects a pure virgin female as his permanent mate and future mother of his children thru the veins of whom no other man's parts have ever circulated. He has a natural abhorrence against the hybridization of his offspring by telegony. Virginity stands in true relationship to the vital facts of life. This is felt by the normal woman even more than by the man. Virginity is the typical

¹ The writer's father had raven-black hair and light blue eyes quite out of harmony with the Mendelian laws of the dominance of the black color.

² E. Davenport (*Principles of Breeding*, p. 185), disclaims telegony as an undisputed fact, so does C. Cousin (*Thèses de Paris*, 1902-1903), but the observations of Darwin, Magne, Miles, Kiener, Agassiz, Morton, Meckel, Pringle, and others all prove that telegony-influences do exist.

honor of the young girl.¹ The human heart felt a law within itself, written by the strong hand of the directing intelligence of the universe, that virginity and strict biological monogamy—of the wolf variety—are of fundamental value to posterity and to the purity of the race.

The perennial impression left on the woman by her former mate restrains esthetic and fastidious men even from marrying a widow or a divorced woman. To safeguard the purity of the high-priestly house, the Hebrew high-priest was enjoined to marry a virgin.² In China, to the present day, the marriage of widows is regarded with social disfavor. This abhorrence to the remarriage of widows may have led the Hindus to widow-burning. The cruel practice has its root in man's extreme detestation of blood chaos.

On the other hand, where an infusion of superior, or fresh blood, in the family appeared advisable, primitive men hit upon the strangest, to the modern mind, most repugnant customs, such as the *jus primae noctis* or the sacrifice of feminine virtue at the shrine of the goddess Mylitta. The permanent impression left on the woman by the first consort forms the background for the custom among many tribes, that the king or a high public dignitary has to deflower the girl before she is rendered marriageable. She was then supposed to bear

superior children even to the man of the lower caste. Such an institution as the *jus primae noctis* cannot rest upon tyranny. If the entire tribe submitted, it had for them a racial reason. Only gross ignorance will offer or accept the stereotype phrases, superstition, or tyranny as an adequate explanation of these strange phenomena. The descendants of Hammurabi would never have sacrificed the virtue of their wives and daughters to mere superstition, nor would an entire nation submit the purity of their brides to tyranny of a king, who among many tribes was after all only a *primus inter pares*. The sacrifice of virtue at the altar of Mylitta or of virginity in the arms of the king was in no sense a sensual or lewd custom, it was a sacred institution for the infusion of fresh or superior blood in the family (*vide* Love, p. 2).

But apart from these few instances the aversion to blood chaos within the family is deeply rooted in man's soul. This aversion is an off-shoot of the general repugnance to racial hybridization. Every plant and animal is bent upon preserving the purity of its species. It will not voluntarily allow any crossing with another kind. Man goes a step farther. He tries to guard the purity of the family against any hybridity, even against the entrance of strange blood of the same race.

The first reason for the wife's chastity was hence rational, tangible, understandable. Conjugal fidelity was imposed upon woman for economic reasons in her own and her children's interest. Even the tyro could see the reasonableness of safeguarding the wife's faithfulness. Hence the violation of the wife's chastity was subjected to the severest punishments of both seducer and seduced by the oldest human

¹Of this honor she can only be robbed by consorting with a man. The accidental rupture of the hymen by any other means does not affect the girl's honor. Neither does the intact hymen after copulation, a thing that not seldom happens, leave her honor intact. The overvaluation of physical virginity owes its origin to the erroneous belief that the presence of the hymen always proves strict purity. But the hymen as such is of no importance.

²Levit. XX. 14, "He shall take a virgin of his own people to wife.—A widow or a divorced woman shall he not take." This addition "of his own people" shows that the entire regulation was aimed at race and family purity.

codes. But the inviolability of the unmarried girl's chastity is emotional and was not so easily understood in the primitive stage of racial history. Sagacity is required in reducing something unknown to something known. Hence the oldest, the Hammurabi code, is silent concerning the violation of the unmarried girl's chastity. At the time of the Old Testament, however, man had advanced so far as to feel that the chastity of every female ought to be inviolable. The violation of the virgin is hence also punished, but only by a fine, and the seducer is bound to marry the girl. It would be a irremediable disaster to her unless she is given into marriage with her deflowerer. As a piece of damaged goods she must never be divorced (Deut. XXII, 28-29). If the violation is discovered after the girl has been married to another man, or after she had brought blood chaos into another man's family, her penalty is death (Deut. XXII, 21). The difference in the punishment of the two girls, who committed the same offense while living in their fathers' houses, is highly significant. In the first instance the girl is not punished at all, she is rather rewarded by marriage to her lover. In the second place the girl is put to death. Why? Not for the violation of her chastity, not "because she has wrought folly in Israel, to play the whore in her father's house,"¹ for the same wrong was committed by the girl in the first instance, but because in the second instance the girl had allowed blood impurity to infect another man's family. If after her violation she had remained unmarried, or if she had married

her seducer, she would not have been punished. Her punishment is due to man's inborn aversion to miscegenation, not to her fault of having allowed the bloom of maidenhood to be rubbed off.

Man had a transcendental notion that the strict adhesion of the female to the monogamic ideal will lead to the procreation of superior offspring.¹ Hence the contempt and ostracism visited upon the impure woman by women themselves. Custom, not codified law, surrounded a protective moral wall around the entire female sex already at the dawn of human history. Female chastity is not a late flower of modern culture. It has come down to us as an emanation from primitive institutions. The moral idea at the root of such institutions originated in man's subconscious feeling that female chastity will contribute to the welfare of future generations. Man felt that blood chaos thru female in chastity somehow effects a certain bastardizing of the offspring, while female purity stands in true relationship to the vital facts of life. Strict female chastity is a great stimulus to the growth of the family, and the family relations helped to ingraft sympathy, devotion, patience, self-sacrifice, courage, and charity upon human nature.

Chastity is thus in close conformity with the basic laws of life. Woman and her children must be preserved, protected, and cared for by the husband and father, otherwise the race would lose its survival value and disappear. Man is hence by nature monogamic, as the fox or the eagle. Under

¹ The writer of Deuteronomy gives this transgression as a reason for the penalty. But the fact must not be overlooked that the Biblical laws have been codified centuries after they have been in force. The real motives for the laws were not always known any longer, especially in this case where the law is motivated by an emotion and a subconscious impulse.

¹ Offspring is apparently nature's only aim in life. Organic life of plant and animal seems to have no other end in view but its preservation. The vast abundance of germ-cells in plant and animal testifies to this fact. Science and art, ethics and morality, philanthropy and charity, they all have only relative values, human values; they are ends for certain human purposes. Offspring, however, is of eternal value, nature wills it.

gregarious life of ancient communism the duties of the husband were transferred upon the group, and promiscuity set in. But man felt a law within himself that this mode of life was not contributing to the best of the race. He was therefore continually groping his way to find the right path. Thus he passed from promiscuity to consanguinity, the punaluan family, back again to the pairing family. When this stage was reached, the law of inheritance forced the wife to strict chastity, and this restriction led to the polygynic patriarchal family. The disparity in the number of women over men, however, was always very slight, hence the general population had to live in monogamy. It was a physical impossibility for the man to have more than one wife. Only the high nobles could indulge in polygamy, and even they were, as a rule, prevented by their wives from this practice. No woman wishes to share her mate with a rival. The mistress like the wife demands devotion and monogamic relations.

In this way man passed through the entire cycle of marriage relations and returned to the point whence he started, to the original monogamy, which is in conformity to his nature. Under monogamy the law against adultery became a dead letter, and custom took over its function. But custom punishes not only the adultress but the violation of the chastity of every female. Custom is the emanation of human feelings, human yearnings and aspirations. These aspirations aim at the purity not only of the race but of the family. Man feels a natural abhorrence against telegony, just as every species in plant and animal has a hatred against crossing.

Race purity, of which chastity is only an off-shoot, being an instinct peculiar to all

organic life, it follows that the male no less than the female must needs to participate in this instinctive feeling. Still the male, in violating this instinct, is only polluting others, while the female is defiling herself. Hence the instinct of race purity and of chastity is higher developed in her than in him.¹ The female element has the guardianship of race purity in her keeping. The pollen of the rose may be carried by the bee to the pistil of the crocus, but it is the duty of this pistil to refuse acceptance. The misplacement of the pollen merely represents a loss to the rose family, but if the crocus pistil opens her arms to embrace the rose's pollen she hybridizes herself and, by procreating a bastard, commits a crime against her entire species. Hence the aversion to hybridization is more pronounced in the female than in the male. Nature has intrusted the purity of the race in the safe-keeping of the female.

The repugnance to blood chaos in the family emanates, therefore, in the woman

¹ Repugnance to hybridization, being a highly developed instinct in the normal female, the aversion of the white woman to consorting with a colored male is neither moral nor immoral but amoral. Morality is the arrest of the instincts by the intellect. An action can only be moral or immoral, if anteceded by three causal experiences, impulse, intellect, and a conflict between the two. When one of the antecedents is absent the act is amoral. An act committed under epileptic, hysterical, somnambulistic, hypnotic or intoxicating influences, while the intellect is in abeyance, is not immoral. Mother-love is meritorious but not moral. Her actions are in harmony with her instinct and not in conflict. A man enjoying domestic felicity with a congenial life companion is not moral because of his fidelity to her. But if there is antipathy between them, and he still shuns the society of other women, his behavior is moral.

Female chastity, looked upon from this angle, is more or less anethical. Her aversion to promiscuity is instinctive. When this instinct comes in conflict with the sexual impulse for a certain man, the conflict is between two instincts and not between instinct and intellect. Hence her discretion is neither ethical nor unethical, but anethical.

For the same reason the phrase "My country

from the sphere of stimuli lying within her, in the man without him. In the woman the internal relations are regulated without necessitating any conscious effort, they are constant automatical processes going on in her own body, the man derives his behavior from outside. In woman the need of blood purity approaches the organism from within, in man from without; in her purity is self-imposed to satisfy a bodily need, in him it is hetero-imposed to satisfy a social sentiment. The woman is impressed by considerations belonging to the sphere of her own bodily needs, the man is impressed by aspects of things related to others. She is introspective, he is extrospective. He has to penetrate into the souls of others, with him it is an externally imposed moral aim, she feels psychical and physical inner hidden causes, they are internal, inborn, bodily organic needs as eating, drinking and sleeping. With her, blood purity is primitive, compulsory, instinctive, it gratifies an emotional need, with him it also appeals to the

right or wrong" is not simply a slogan of slaves. There is an inborn impulse behind the love of one's race or country. Patriotism is an instinct and is hence anethical. The great religious moral teachers from the Bible to the Talmud and from the fathers of the Church to the reformation knew this instinct and never elevated patriotism to an ethical precept. In a recent lecture on patriotism attended by the writer, the lecturer, a Unitarian minister, tried with great ingenuity to explain this silence of ethics by insinuating a certain absence of patriotism among the Jews and early Christians, who dreamed of a Messianic Kingdom of God on earth where patriotism had no room. But any reader of the Bible will find the Jewish nation almost constantly in war with other tribes. Nor did the Christian nations abstain from war thruout the middle ages, and war is conditioned by patriotism. Hence the silence of ethics cannot be attributed to lack of patriotism but has another reason. Real patriotism, not the mere blind hero-worship, stupid flag-idolatry, or hatred of foreigners, but real love of one's country or of one's race is instinctive in every normal individual, and the instinct is in perfect harmony with intellect. Hence a conflict between the two is absent, and this fact removes the emotion of patriotism from the domain of ethics.

emotions, but thru the intellect, it is a free, intellectual, sociable demand, it arises from a social need. With him it is a conscious reflection and deliberation, with her, automatism, subconsciousness, instinct. With him it is an idea, a sentiment, a conscious reaction, in her it is an instinct, an emotion, an habitual reaction. With her the necessity works its way from within, it is hereditary, predetermined, it is an inner quality, with him the necessity works from without, it is a phenomenon of the external world, he has no real objective experience, it is an outer quality. The psychological genesis of man's chastity is thus more or less founded on altruism, woman finds the source of her purity within herself, it is an emanation of her own ego. He finds his inspiration in the external world, his altruism must gain control over his passions, he must possess the ability to identify himself with his neighbor, with her a permanent, inherited organic instinct gains control over a transitory, fleeting, passionate impulse.¹

In the analytical study of the subject of female chastity, the writer has endeavored to determine the etiological factors in the production of this emotion. His investigations in the genetics of human conduct led him to the discovery of a double origin of female purity. The first factor of her chastity is a conscious, moral reason. When under sensual excitement or economic duress, the normal female is on the point of leaving the straight path of chastity, the categorical imperative steps into her way and calls into her ear "Thou shalt not

¹ This is the reason why woman does not so easily fall a prey to men's allurements as men do to woman's enticements; not because the female sex-urge is less developed as superficial observers explain this phenomenon, but because the purity instinct strengthens her inhibitory powers.

jeopardize the economic life of yourself and of your offspring, thou shalt not expose yourself to the ostracism of your sisters and render yourself a social outcast."

The second reason for female chastity is discovered by the scientific study of the psychology of the unconscious. This study reveals the existence of a certain something, as a part of human nature, exceeding in its extent and influence our conscious mental life. The racial imperative "Thou shalt not introduce strange blood into your system and cause blood chaos in your offspring" does not enter into the woman's awareness, it does not rise to the level of consciousness. But the inhibitory centre of the normal female, whose mind is not entirely obsessed with sex matters, is so developed that she naturally and instinctively shrinks from the embrace of a strange man and refuses to permit any approach to intimacy with any other man except with her permanent mate. This inhibitory behavior is conditioned by unconscious wishes rather than by the demands of objective knowledge. The instinct is a part of the fourth instinct, the herd-instinct, which exercises a controlling power upon the individual from without.¹

Man, being a social animal, and socialized gregariousness being the goal of man's development, the three commands of the categorical imperative "Thou shalt not jeopardize the economic welfare of your neighbor's wife and children, thou shalt not render his daughter a social outcast, and thou shalt not introduce blood chaos into his family," should have a moral binding also

upon the man. And they have. Almost all normal decent men will shrink from violating the chastity of another man's wife or the virginity of his daughter. If very sensual, such men turn their steps to meretricious venery.

These female outcasts live beyond the pale of the herd. In polluting them the man does no violence to the herd instinct and does not transgress the three commands of the categorical imperative. His act is hence in this respect not immoral but amoral. With the receptive female the case is entirely different. In her intercourse with men she is not polluting others but is polluted herself. Hence in her association with male outcasts—and such professional fornicators and prostibula do exist in the great capitals of Europe—she is defiling herself no less than when consorting with men of her own group. In either case she transgresses the three commands and commits an offense against the herd. Her act is hence immoral. She cannot escape the moral imperative "Thou shalt not pollute yourself in any mode or manner"; he can.

Still there is a valid ethical reason why even the man should not give free reins to his passions in the society of meretricious venery. There is another moral imperative which commands him "Thou shalt not expose yourself to the pollution of disease by these outcasts and thus jeopardize the health and life of your wife and children." If the man pollutes the female outcast, she in turn may defile him by transmitting to him two terrible diseases which are sapping the vital forces of modern nations. There are hence two valid moral reasons why men too should shun the society of meretricious venery, and these reasons are the gonococcus and the spirocheta pallida.

12 W. 123rd St.

¹ The four instincts which bulk largely in man's life, are self-preservation, hunger, sex, and gregariousness. The first three are pleasant to yield, the fourth, the herd-instinct is not always pleasant to comply with. This instinct exercises a controlling power upon the individual from without.

ON TRANSLUMINATION OF THE LARYNX AND OF THE SINUS MAXILLARIS, WITH SPECIAL REFERENCE TO VOLTOLINI'S WORK.¹

BY

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It is with the object of clearing up certain errors that have been made of late, rather than of communicating much that is new, that these remarks are published.

Translumination of the larynx is not a new procedure; it is as old as laryngoscopy and was practiced by Czermak² and Tuerck in Vienna as early as 1858-59. They as well as other German scientists (Gerhard,

ination. Voltolini, however, did not believe that it could replace the Liston-Garcia method of laryngoscopy, which is still used in our every day practice; he considered it rather as a valuable addition to the latter.

Before going into the merits of this method, permit me to give you a description of Voltolini's apparatus as well as my own modification thereof.

In the casing A (Fig. 1) is an electric lamp, in front of which is placed a round bowl, filled with water. The bowl serves the double purpose: (1) of concentrating the rays of light like a biconvex lens, and (2) of preventing burns of the skin by the lamp. I have made the whole apparatus somewhat larger by increasing the size of

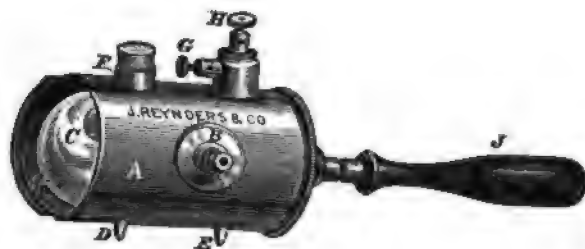


FIG. 1.

Stoerk, etc.) employed sunlight or magnesium light; but the procedure was little more than play, as von Schroetter called it, and it was left to Professor Voltolini of Breslau to give to the profession an exploratory method that has proved to be simple and useful.

Voltolini was the first to apply the electric lamp, only shortly before invented by Edison, by means of which a good and reliable source of light was obtained and the vision made clear. He should be considered, therefore, the father of translum-

the casing and the lamp, thus securing better illumination of the interior of the larynx. Furthermore I very soon noticed that in people with a pronounced pomum Adami too many rays of light were lost and imperfect illumination resulted. I, therefore, had the anterior portion of the casing at K made hollow so as to conform better to the outer shape of the larynx. That part was besides covered with rubber. Finally a handle was attached, which can be screwed on at either side (at B for example) or posteriorly.

You ask now: What are we able to see with this lamp? My answer is this. By placing the lamp on the outside of the larynx and introducing the heated laryngeal

¹ Remarks made in part before the Section on Laryngology of the New York Academy of Medicine, March 28, 1917.

² In the English translation of Czermak's work the chapter on translumination was omitted.

mirror into the dark pharynx, we obtain a splendid view which is entirely different from that ordinarily seen.

"The first thing that strikes the observer is the disappearance of different colors. The whole larynx shows a reddish tint of varying intensity. When we place the lamp at the level of the incisura thyreoidea, then the vocal bands and all parts above them appear of a beautiful red color (of course the epiglottis is dark). But when we place the lamp near the cricoid cartilage, then we get a better survey of the whole subglottic region down to the bifurcation of the trachea, and this view is often more satisfactory than that obtained by the common method. But it must be observed that we have to become accustomed to this peculiar view of the larynx, for it may be said we see mostly in the negative. What in ordinary illumination impressed us as a thickening or enlargement of a solid mass, in translumination strikes us as a dark object. The rays of light cannot penetrate, and we infer that a solid mass, or a mass subject to the same optical laws, must intervene. We will therefore be able to define more precisely the contour of a tumor, because we see how the mass differentiates itself sharply by its dark outlines from the other parts in view." These words were written by me in 1890, and it should be added, that this last assertion holds good mostly for tumors at the anterior wall of the larynx or trachea. But the writer has also observed a tumor on the posterior wall (*i. e.*, its anterior portion) extending from the arytenoid downward, where he was able to discern its circumference more clearly by means of translumination than by the ordinary method. That was, of course, in the prebronchoscopic era. Yet even now-

adays it may be of benefit to resort to translumination in such rare cases.

A detailed differentiation, however, is not possible, as everything appears red when the light is conducted thru the circulating blood; or dark, when it is not. (Compare the phalanges of your fingers, when the sun strikes them). For that reason we ought to be able to differentiate between a solid tumor and a cyst.

Voltolini's supposition that by his method it might be possible to determine the vertical diameter of the vocal cords and eventually the character of a neoplasm on these parts, has not been verified. It was his idea that benign tumors stand out from the vocal cords, while cancer, for example, sends its epithelial proliferations directly into the tissue; but his method did not clear up that point.

It will be advantageous, in some cases, to again try translumination of the larynx, which has apparently been forgotten in certain quarters. Occasionally it may undoubtedly prove of benefit. In by far the majority of other cases, however, where the indirect method is of no avail, we shall have to resort to the procedures originated by Killian, of Berlin, Kirstein and others, namely, direct laryngoscopy, tracheoscopy and bronchoscopy.

At the same meeting at which the writer demonstrated the above method, he also showed the translumination of the antrum of Highmore, this being the first public demonstration of its kind in the U. S. In this connection a few remarks, which are of historical rather than of practical value, may be added here.

The diagnosis of a maxillary empyema had been a difficult matter, in most cases even impossible up to the time when Hart-

mann of Berlin, Krieg,¹ Ziem,² Moritz Schmidt,³ and other laryngologists published their observations. Ziem and Bresgen tried to aspirate the pus thru the ostium maxillare, while Moritz Schmidt recommended exploratory puncture thru the thin wall separating the antrum from the inferior meatus of the nose, a method still in use at the present day. At that time (*i. e.*, 1888) Voltolini⁴ made known his translumination of the antrum, which was taken up quickly by Heryng,⁵ the writer, Vohsen of Frankfurt on the Main and others. Vohsen originated the translumination of the frontal sinus, but, as was to be expected all the instruments devised for these methods of examination were improved and simplified here as well as abroad.

In my first publication⁶ I considered translumination of the maxillary sinus a most valuable aid to diagnosis; but even at that early date I remarked that one can not absolutely rely on it in every instance. We are often misled by certain formations of the bones, etc. It is only when we see the pus coming out of the antrum or of any other sinus, or evacuate it thru an exploratory puncture, that we can state positively: In this case there is an empyema. I still hold the same view.

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59 East 75th Street.

SANITATION OF A CANADIAN MILITARY CAMP.¹

BY

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Introduction.—In view of the forthcoming establishment of a large number of military camps in the United States to accommodate the first draft of American soldiers, a brief description of one of the newest Canadian military camps, that known as Camp Borden, will doubtless prove of some interest.

The camp is in Military District No. 2 and is situated in Simcoe County, Ontario, about 60 miles northwest of Toronto. It comprises about 18,000 acres of sandy, grass-covered plain about 10 miles from the town of Alliston and 12 miles from Barrie.

The area in general is level. It is traversed by two small rivers, the Pine running in a direction northeasterly and the Mad from west to east at the northerly limit of the camp. The character of the soil is well adapted for the purpose of a camp. It is dry and porous, admitting of excellent drainage. It is well removed from low lying lands, and from any large urban center of population. There is an absence of marsh or stagnant water and its elevation of from 750 to 850 feet above sea level permits of excellent drainage.

Transportation.—Transportation is an easy matter as two railways, the Grand Trunk and Canadian Pacific, have stations inside the camp limits and within a quarter of a mile from headquarters. The country

¹ Read at meeting of Canadian Public Health Association, Quebec.

roads are gravelled and above the average.

Water.—The one indispensable requisite of a satisfactory camp is a pure and adequate supply of water. This is thoroly well met in the camp by artesian wells, six in number, giving a daily supply of one and three-quarter million gallons. During the month of July of this year the weather was unusually hot and dry, yet 35,000 men were able to use all the water they required without materially diminishing the outflow from the wells. The water is pumped by means of two electrically driven pumps with a capacity of 1,000 gallons a minute. The water is pumped to two 100,000 gallon tanks placed at an elevation of 130 feet above camp level, thus providing adequate pressure. The water is practically sterile, of moderate hardness, clear and cold.

Sewage.—Disposal of sewage and other liquid wastes is provided for as follows:

Each battalion has 5% of flush closets of the "range" type placed in stucco-covered buildings.

A full complement of showers is provided for both officers and men, separate latrine and shower buildings being supplied to each unit. The sewers are deeply laid being of 12" x 15" and 18" glazed tile.

Kitchen liquid waste is all passed to the sewers, each kitchen being supplied with a large sink and each unit with a screened concrete saucer into which garbage liquids are drained.

The sewers, of which there are several miles in the camp, lead to a large sedimentation tank adjacent to the Pine River. This tank, which is of one of the finest types of construction I have seen, is about 30 feet deep, 80 feet long, 60 feet interior measurement and has a capacity of about 200,000 gallons. The effluent is to be chlorinated.

In certain outlying parts of the camp such as the Musketry School and the School of Infantry where sewage is not provided, buckets are used. These are placed in wired latrine buildings and the contents removed daily or oftener, by the sanitary contractor and conveyed to a distance of about a mile from any part of the camp in use. In the trenches where mimic warfare is conducted, buckets are used and the most rigid supervision of sanitary detail enforced.

Solid Wastes.—Non-combustible material such as tin cans, bottles, wire, etc., is removed by the sanitary contractor to an area away from the used portion of the camp. They are sprayed with oil and incinerated at intervals. Bones are placed in securely covered barrels provided for the purpose and removed by a party who purchased them by tender. Manure from the stables of each unit is placed in covered ventilated receptacles and removed once a day. Kitchen waste, including remnants of food, peelings, paper, boxes of wood or pasteboard, is destroyed in the type of incinerator called the "Reid." This is a metal box about four feet in diameter lined with firebrick and, if handled with a little care, gives satisfactory results.

In England the Horsfall Incinerator is used for the same purpose about one hundred pounds of coal being used as fuel each day. Before this metal type was introduced the various units had constructed incinerators in a variety of styles, made of sods, concrete or brick which are familiar to military men. In connection with the type now in use several of the units have established coils inside the incinerator to heat water either for the purpose of bathing or for boiling the dishes.

Kitchens.—The kitchens, of which

there are four to a battalion with an extra one for each brigade headquarters are constructed in groups of two. They are wire-screened from about three feet of the ground and have spring screen doors. In some cases the floor is of wood, in others of sand and gravel and in some is made of concrete.

Refrigerators.—Many of the units have constructed dug-outs in which meat and other foods are kept and in some cases refrigerators have been placed thus ensuring proper preservation of butter, milk, meat, fruit and other perishable goods.

Dishes.—Because of the fact that most of the communicable diseases, such as diphtheria and influenza, scarlet fever, measles and meningitis, are conveyed from mouth to mouth, common cups have been abolished in canteen. If used at all, these articles, as well as all dishes and kitchen utensils used in common, are required to be boiled after each using. We consider this means of prevention so valuable, especially when troops are in barracks, that it is very strictly enforced.

Communicable Diseases.—The isolation and quarantine of each communicable disease is strictly observed both as to cases and contacts. It is of interest in this connection to observe how easily affections such for example as meningitis or diphtheria are controlled among soldiers in contrast to that of civilian life. In the latter the public and not infrequently the physician in attendance fail to notify these diseases in order to avoid quarantine but the medical officer of the battalion as well as both officers and men do not want such cases in their lines and get them out as soon as possible. The result is that first cases of this character are promptly diagnosed, notified and isolated, and in consequence the

incidence of the common communicable diseases is less in military than in civil life. But there are a few communicable diseases among soldiers, the record of which we sanitary officers are not proud of. These are syphilis, gonorrhea and pneumonia. During the ten months from October, 1915 to July, 1916 inclusive, in say some 50,000 men we had over the whole of M. D. No. 2, 1,439 cases of communicable disease. These included 90 cases of pneumonia, 51 of scarlet fever, 261 of measles, 47 of diphtheria, 96 typhoid fever, 90 of syphilis, and 550 of gonorrhea. There were 23 deaths and of these 18 or 78% were from pneumonia, which has displaced typhoid fever in point of mortality in military camps. While gonorrhea and syphilis do not compete with other communicable affections in mortality the remote effects are so serious that prevention in all three affections are engaging the earnest attention of our sanitary and medical officers. Cerebro-spinal-meningitis does not cause us any great concern and, while we had 96 cases of typhoid fever all during the winter months 86 of these occurred among uninoculated troops in Parry Sound and were due to a polluted water supply.

Typhoid Inoculation and Vaccination.—All troops not already inoculated and vaccinated receive their injections of mixed typhoid and paratyphoid vaccine at intervals of seven days, the smallpox vaccination being given on the day preceding the last inoculation. The value of typhoid inoculation has been fully justified by the low typhoid rate among our troops at the front.

Laboratory Facilities.—A laboratory is established both at the Base Hospital in Toronto and at Camp Borden. The one at camp is used for water examination, inoculation and vaccination, and that at

Toronto for complete bacteriological and pathological work.

Blankets.—All blankets are sterilized at intervals of two weeks, facilities being provided for doing the blankets of two battalions per day. The blankets are subjected to live steam for twenty minutes and then to dry heat for five minutes or longer as required. Hot water and cold showers are also provided at the fumigator for the use of men affected with vermin.

In regard to Camp Borden I desire to say that from the statements of medical officers who have had a varied experience here and elsewhere during the war, it is quite certain that there is no other military camp in existence which affords such varied facilities for the comfort of enlisted men. The low sickness rate in this camp, the exceedingly low mortality and the general physical appearance of the men are a sufficient answer to the unfounded criticisms of this Canadian Camp.

THE OPTICIAN AND THE OCULIST.¹

BY

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Within recent years there has been a rapid development of many cults in the healing art. Men of all shades of ignorance, taking advantage of the absence of any law that regulates the art of healing, have been plying their trades, extorting money from an innocent public until the matter became a public nuisance. Pennsylvania, especially, became the dumping ground for all quacks and charlatans. The

State Medical Board appealed to the legislature and succeeded in having a law passed that compels those that wish to earn a livelihood by practicing any method of healing, to pass an examination, so as to give some evidence of some knowledge and intelligence of the method they employ. There was nothing arbitrary in this demand. It was an attempt in the right direction to protect the public against pretenders and the unscrupulous. The various healers have placed themselves under the regulations of the State Medical Board, realizing that it is for the best interest of all concerned. The opticians, however, assumed a hostile attitude and determined to place obstacles in the way of regulating their conduct and practice. Thru their representative they have appealed the case to the court, to decide whether or not the science of prescribing and measuring for glasses should come under control of the State Bureau of Medical Education and Licensure. The court decided in favor of the opticians.

There was much of the common element in the verdict of the Common Pleas Court of Philadelphia. Of course judges are human like the rest of us mortals and while they possess what they choose to call the cool and calm judicial mind and temperament, they are not entirely emancipated from old prescientific notions. It is to be regretted that men who sit on the high judicial benches pay more heed to the testimony of business promoters than to the unadulterated voice of science.

According to the interpretation of the court we are asked to accept the verdict "that the measurement of the range of vision and its correction by men engaged in the business of selling glasses is purely a mechanical process." The medieval mind, not familiar with modern ideas, who has for years purchased his glasses at the pub-

¹ Read before the Lebanon Hospital Clinical Association.

lic stand, may and will be delighted with the authentic declaration, which so elaborately publicly gives expression to the idea he so long cherished. But the rational and thinking mind will probably ask how can the determination of the visual range and its correction be considered purely a mechanical process? The very fact that we wish to correct or increase the range of vision tells us that there is an abnormal condition that requires correction. The question suggests itself what is the nature of this abnormal condition that calls for correction? What is it due to? Why is the range of vision deficient? Where is the impediment that prevents this eye from seeing? Is it in the lack of transparency in the ocular media? What caused this lack of transparency? How could this media through which the rays of light have to pass be made more transparent? Is this purely a mechanical process? The reduction in the range of vision may be caused by a disease of the internal structures of the eye which fail to respond properly to the stimulation of light. What is the nature of this condition that reduces the sensitiveness of the ocular structures? Is this purely a mechanical process? Perhaps the range of vision is reduced because of some interference in the light conducting apparatus, in the optic nerve, the eye otherwise being normal. What is the nature of this interference with the conducting nerve, and how can it be remedied? Is this purely a mechanical process? But the range of vision may be subnormal when the eye is normal, the impediment being in some toxic condition of the nerve or the brain itself, how is this range of vision to be measured and corrected by the erroneous decision of the court "that the measurement of the visual range and its correction is purely a mechanical process?"

It is self-evident that in measuring the range of vision and in its correction, we have to decide upon the cause that interferes with vision which we are called upon to correct with glasses. How can we decide upon one process of correcting if we cannot exclude the other causes that may interfere with our vision? We can only conclude that a defective ocular mechanism is the cause of our reduced vision if we can exclude by a process of elimination all other causes. We must diagnose by exclusion. This with due respect to Common Pleas Court is not purely a mechanical process. It requires diagnostic ability and should come within the sphere of regulation under the control of the State Board of Medical Education.

The reasons advanced by the opticians why their practice should not be regulated by the State Board of Medical Education are (1) priority, (2) that measuring the range of vision and the correction of any refractive error—in the absence of any attempt to diagnose any ocular disease—is merely a mechanical process and is not subject to the new rules adopted by the state legislature.

Let us carefully consider these arguments and see if they will stand the test of reason. It is true that optical science has been in the hands of non-medical men since the 13th century. The opticians have contributed their share in the evolution of the science, they have done their service to mankind until medicine has embraced the science and has improved upon it. Until recently, however, the science of optics and the art of prescribing glasses was indeed a crude non-scientific entity. Medical science has made its rapid advancement possible. The science has become so complicated that only the few are able to grasp it intelligently. The plea of priority cannot be

considered a valid one. Barbers were dentists and surgeons not so very long ago and they have served humanity, but scientific dentistry and surgery has displaced them. They could not and would not claim the right to practice on the ground of priority. Cataract coaches or depressors—and they are still existing in the Orient—flourished long before modern ophthalmic surgery developed to a high degree of efficiency, but they were displaced by the modern method of aseptic surgery. The cult cannot travel and ply their trade on the historical ground of priority.

Mankind progresses slowly but surely and will not suffer any regression. Horse-cars and stage coaches have a claim on mankind. They served our interest in the past, but while we are ready to appreciate the service rendered we cannot entrust the wheels of commerce and industry to such unscientific method of transportation. The oil lamp can no longer be relied upon to illuminate our homes and cities on the ground of priority, and in its conflict with the more modern means of electric illumination, it humbly acknowledges defeat, and retreats to those corners of the globe where the rays of modern science has as yet not penetrated the opaque refractive media of ignorance.

Obstetrics, or midwifery, was the sole property of ignorant women in the past, with an appalling mortality, but medical science has improved conditions and has stripped maternity of its fears and dangers. Should not motherhood be protected by the best means science has at its disposal? Shall we return to the dark ages of superstition or shall we be guided by the light of reason? The medical profession does not intend to drive the midwife out of existence; it does not wish to burn

the witch, but it does appeal to the public and to the state, to see to it, that, by a slow process of evolution, she be compelled to be familiar with the human body, with the relation of maternity to the general condition of the sex, so as to be able to foreshadow any impending danger and remedy the same before it is too late. We want the midwife to be an intelligent woman with a knowledge of the rudiments of science. Let the midwives study one, two or three years, pass an examination before the State Medical Bureau and then attend to the needs of the mothers of the coming generation. It is indeed ridiculous to permit ignorant woman to practice the complicated art of midwifery, and at the same time demand from the men, who wish to enter the same field of activity, a high school diploma, a college course, a four years' medical course, one year hospital practice, and a state board examination. This demand from the stronger sex is reasonable, and just, for the protection of society, but let us be fair and make the same demand from any woman that wishes to practice the art of midwifery. Incompetency is as dangerous in the hand of a woman as in the hands of a man.

One could multiply examples to show that the cry of priority is not sufficient to continue a practice that involves and endangers the health of the community. The optician's claim to continue an evil on the ground of priority is unreasonable and unscientific.

Now as to the second argument, that the opticians do not attempt to diagnose disease; merely because they do not understand it; and that the adjustment of visual difficulties is merely a mechanical process, one can only say that there is the very rub. In this very argument lurks the danger to

the community. The human eye is not an independent organ and vision is not a mere physical process. Every visual act has a physical, physiological and psychological basis so intricately interlaced that it requires a careful and special study, so much so that the average physician considers himself unable to grapple with the thousand and one problems that it constantly presents and only the selected few who devoted their time to this study receive the recognition of being able to cope with the situation. The conservation of the visual faculty of the nation is carefully guarded by these few earnest workers and everything depends upon the ability of being able to diagnose cases early so as to prevent serious trouble.

A few concrete illustrations will serve to convince the public of the necessity to have the knowledge of recognizing conditions early, not only with the view of conserving the visual function, but also with the intention of saving life. It is well known to us, who have given our attention to the study of the human eye in health and disease, that the first symptoms of diabetes and chronic kidney diseases may be a constant desire of the individual to frequently change glasses because of some slight transitory visual difficulty. Vision may be normal or slightly subnormal at the time of examination.

It is also a common knowledge that these diseases are accidentally discovered by the eye specialist while examining the patient for the correction of some visual error, by some definite ocular signs known to the ophthalmologist who at once informs the patient and his physician, so as to administer such treatment that will save years of useful life. Shall such cases be entrusted to men of no schooling, no preliminary education, with no knowledge of the condition

present, with no power to reason as to cause and effect? The early recognition of these symptoms by a competent oculist is essential to save or prolong life. The plea of inability to diagnose cases by the optician is a folly that none but the ignorant can approve.

What shall be said of the thousands who are glassed by the optician, when as a matter of fact, they are in need of medical aid, rather than optical aid, merely because neither optician nor patient can discover any inflammatory signs to indicate that somewhere hidden in the ocular tissues is a dangerous disease gradually undermining his visual acuity. Supposing you are in the early or incipient stage of chronic glaucoma, not knowing the fact that ultimate blindness stares you in the face, you go to the optician, drawn there by the alluring advertisement, your optician knows nothing of the danger you are in and in return for your money you are given a pair of glasses which you are wearing, thinking all the time that all is well, while as a matter of fact you are gradually progressing to a life of utter darkness, only to discover the fact when it is too late. It is dangerous indeed to meddle with the human eye, when you are not able to recognize the difference between a normal and an abnormal condition. A man may have some optic nerve disease in its early stages, when vision is only slightly blurred; of what value will glasses given by the optician be to him? Of course the optician does not diagnose, not because there is no need for diagnosis, but because he is ignorant and unschooled in the technic but this inability to diagnose and to warn the patient is surely not a virtue upon which the optician wishes to establish his claim to the right of examining eyes, without first at least undergoing an

examination that will regulate his calling, so as to minimize the danger to the community.

A man may have a small hemorrhage in the eye, not visible to the naked eye, neither patient nor optician knows anything about it until an apoplectic stroke, that is, hemorrhage in the brain, takes place which results in death. Nature's sign of an impending danger that can be averted has not been observed by the man who takes your money, and says he does not diagnose disease. Should not mankind be guarded against these possible accidents?

The days when mankind had to rely upon opticians are coming to a close; a new era is on hand. We have learned by experience, we know more, and we must avail ourselves of the newer methods to conserve vision and save life.

The demand of the State Bureau of Medical Licensure is just, and reasonable in the interest of humanity. Plumbers must show some evidence of sanitary knowledge and surely our eyes are as dear to us as our waste pipes.

The optician must come to the conclusion that the science of optics and ophthalmology and medicine are correlated and that the followers of that practice must be trained men. Headaches and nervous diseases are caused by the eyes, even crossed eyes may be caused by paralysis of some eye muscles which the examiner should be able to diagnose. It follows that he who would be engaged in the examination of the human eye must be learned in the science of medicine, with a special training in the practice of ocular diseases. This belongs to the future. What shall be done for the present? Opticians ply their trade under the assumed title of doctor, for which they neither toiled, nor labored; shall there be no regulation in

the camp of incompetents? Some way must be found to minimize the danger to the community. The optician fears that he will be driven out of existence if compelled to undergo an examination before the State Bureau of Medical Education. But this is erroneous. It will merely compel him to study to familiarize himself with the conditions that will confront him and give evidence of a fair knowledge on the subject before he will be permitted to practice his complicated calling. It should also be remembered that glasses will have to be made, ground, and adjusted, which is his special field of activity. He will fill the prescription of the oculist even as the druggist fills the prescription of the physician. The public must be protected against pretenders who wish to do more than they are qualified to do. Let us follow the dictates of reason, let us accept the latest theories of science and until the millenium comes, let us at least minimize the evil by compelling all opticians to give some evidence of fitness before the State Bureau of Medical Education which is the only legal authority to protect the sanitary and hygienic condition of the community.

917 Spruce St.

Snake Bite.—Submerge the wound in kerosene oil for two hours says Davis in *Critic and Guide* (June, 1917), and the patient suffers very little inconvenience from the bite.

Conjunctivitis.—In inflammation of the eyes and lids, use a lotion made of acetate of zinc, 2 grains; morphine sulphate, 2 grains; and water, 1 ounce, mixed. A few drops of the solution dropped into the eye, three or four times daily, never fails to relieve.—*Clinical Medicine*.

A CASE OF TONSILLITIS COMPLICATED BY ACUTE NEPHRITIS.

BY

CAROLUS M. COBB, M. D.,

Lynn, Mass.

The following case is so typical of the cases of acute nephritis which are caused by inflammation of the tonsils that it seems desirable to publish it. On Jan. 8, 1917, I was asked by Dr. W. L. Hearn to see a case with him in the Lynn hospital. The house physician's notes are very complete and are given in full as follows:

E. F. aged 6 years.

Family History.—All living, mother and one brother have just recovered from tonsillitis.

Personal History.—Cervical glands enlarged at one and one-half years, whooping cough at two years, measles at four years, German measles at five years, tonsillitis in August, 1916, sick ten days.

Present Illness.—On afternoon of Dec. 22, 1916, complained of headache; Dec. 23, throat sore and Dr. Harris of Cliftondale ordered him to bed. Child remained in bed, on Dec. 28, cervical glands near angle of right jaw became enlarged. Suffered from persistent headache; very restless at night; temperature 101 to 103 higher at night. Jan. 1, he passed water about every half hour, in large quantities and the next evening the mother noticed considerable blood in the urine; she had not seen any previously.

Physical Examination.—Well developed and nourished; skin hot and dry; eyes negative; throat inflamed, tonsils enlarged and inflamed, follicles of right tonsil filled with plugs of mucus.

Tongue clean and moist; several carious teeth; lungs negative.

Heart—apex—fourth interspace, nipple line; sounds regular; good quality.

Abdomen—flat, tympanitic, tender just above the symphysis.

Nervous system—reflexes normal.

Glands—cervical glands enlarged on both sides, one very large gland on the right side at the level of the angle of the jaw; inguinal glands palpable.

Diagnosis.—Cervical adenitis; tonsillitis; acute nephritis.

Jan. 5th.—Some follicular secretion remains in the right tonsil; ice cap to the throat; glands somewhat softer; no local redness.

Jan. 8th.—Seen by Doctor Cobb; ice pack changed to 25% ichthyol sol. and hot applications of clay or flaxseed.

Jan. 10th.—Urine shows some pus cells; no microscopic evidence of bladder cells; casts and blood persist; glands slightly improved; tonsils still enlarged.

Jan. 11th.—Epistaxis from left nostril.

Jan. 19th.—Omitted poultice as glands have softened and practically disappeared; urine contains hyaline, granular, and cellular casts; numerous small, round nucleated cells; a few caudate cells; an occasional red cell; a few pus cells, and leucocytes.

Feb. 3rd.—Examination of the urine every two days shows that it has gradually cleared and at present there is no albumen; an occasional cellular cast; a few round epithelial cells; and a few pus cells.

Feb. 7th.—Discharged; condition good.

I have given the treatment only so far as it related to the disease of the throat and the lymphatic infection of the neck. So far as the treatment of the tonsils went, they were let alone because experience has shown that it is not safe to undertake manipulation of diseased tonsils when they are the source of infection until the secondary disease has subsided. How soon after the patient has recovered from the secondary disease it is safe to remove enlarged tonsils is a serious question. That such tonsils must be removed if we are to safeguard the future health of our patient is very evident, but when? I am inclined to wait, not only for the disappearance of the secondary disease, but until the tonsil is in as healthy a condition as can reasonably be expected. Generally there is a danger of operating too soon, and in this way exposing the patient to another infection. Absorption from the denuded surface left in

the throat after the removal of tonsils, takes place very readily. Our patient went home with his tonsils and will have them removed later.

We did not use sprays or gargles, because it seemed perfectly useless to gargle or spray a throat after the infection was deep enough in the tissues to infect the lymph glands and the blood stream. The use of ichthyol with heat and pressure applied over it certainly works very well. It is much more effectual used in this way than any other with which I am familiar.

TREATMENT OF INFECTED WOUNDS. (Carrel Method).

BY

B. SHERWOOD-DUNN, M. D.,

Officier d'Académie; Member Correspondent Société Obstétrique et Gynécologique; Surgeon (Colonel) Service de Santé Militaire de Paris; Physician to Cochin Hospital, Paris, France.

My service at the front was located seven miles beyond Compiègne, where Doctor Carrel has established his hospital, and I profited by my nearness to visit him several times and study in detail his method of continuous irrigation of wounds with his modified Dakin solution, now commonly known and called the Carrel solution.

His method has met with a good deal of opposition in the Army Surgical Corps and rather widespread ridicule has been directed at his solution. It has been commonly dubbed "Eau de Javel" and called the "washer-woman treatment," because the "Eau de Javel" has the same base as his solution and is universally used by French

laundries to eat up and destroy the linen of their customers.

Those who have travelled in France will acutely appreciate this statement.

Nevertheless, Carrel's method of sterilizing wounds forms the most valuable contribution to this end that has ever come to the surgeon, and in point of cost and successful results is superior to all others.

A great many surgeons have stated that their employment and observations of the treatment in their service was unsatisfactory, until it is now recognized by the surgical inspectors that, to secure good results, the practitioner must have the solution properly prepared, free from deleterious elements, and in the correct percentages, together with an adequate and practical idea of the "technic" of the treatment which must be applied methodically, intelligently and unceasingly, until the desired results are obtained.

The Solution.—The Carrel solution is somewhat difficult to prepare because of the instability and variation in quality of the chloride of lime, forming its chief ingredient. The quality of this element, in commerce is extremely variable, ranging from 20 to 40 per cent. in the amount of active chloride contained and to this variation can doubtless be attributed the unsatisfactory results reported by various surgeons.

After much experimentation and observation, Carrel has arrived at the following formula, as offering the maximum of simplicity and best results.¹

1°—To prepare 10 litres of solution, weigh carefully chloride of lime (25% of active chloride) 200 grammes; dry carbonate of soda 100 grammes, or, in its place carbonate of soda, crystals 285 grammes; bicarbonate of soda 80 grammes.

2°—Into a glass container, holding 12 litres, and containing 5 litres of ordinary water, place the 200 grammes of chloride

¹"Mode de préparation de l'Hypochlorite de Soude Chirurgical." M. Dufresne in *La Presse Médicale*, Oct. 23rd, 1916.

of lime: shake it up well several times and allow it to stand over night.

3°—In another 5 litres of water, dissolve the carbonate and bicarbonate of soda.

4°—On the following day, pour this solution into the glass containing the lime solution and shake it thoroly for a minute or two, then set it aside and allow the sediment to settle.

5°—At the end of half an hour, siphon off

sable to know the percentage of active chloride possessed by that which it is proposed to make use of in order to calculate the exact amount required to produce the correct proportion in the solution.

This dosage is arrived at in the following manner:

Take 20 grammes of the chloride of lime and thoroly dilute it in one litre of water, for several hours.

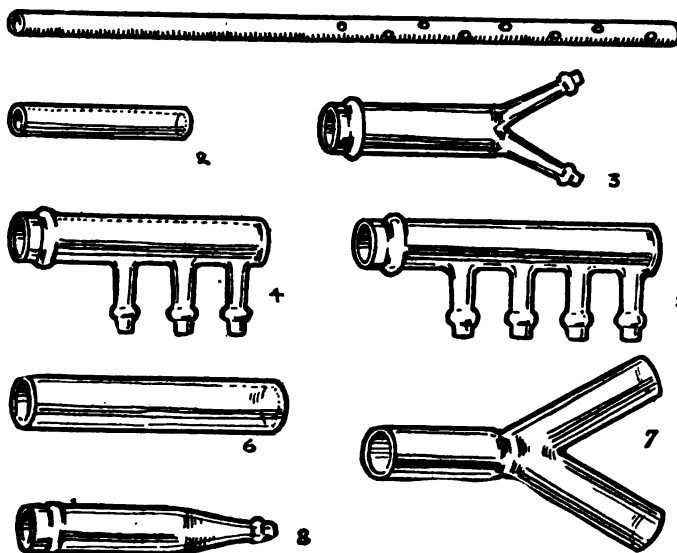


FIG. 1.—Adductor tube closed at one end and having perforations extending upward as far as required.⁽¹⁾

FIG. 2.—Glass tube intended to connect two rubber tubes of same caliber.

FIG. 3.—Glass tube in Y intended to connect the supply tube with adductor tubes.

FIG. 4.—Glass tube connecting several adductor tubes to the supply tube; this tube is closed at one end.

FIG. 5.—Used for the same purpose as Fig. 4.

FIG. 6.—Glass tube used in the supply tube to lengthen same when necessary and to show the free flow of the solution when the clamp is opened.

FIG. 7.—Glass tube in Y to afford two branches to supply tube when required.

FIG. 8.—Glass tube to unite the supply tube with an adductor tube.

the clear liquid and filter thru a double filter paper to obtain a perfectly limpid liquid, which should be kept in a dark place, away from the light.

The solution so prepared should contain 0.45 to 0.50 per 100 of the hypochlorite of soda with traces of neutral soda salts and is sensibly isotonic to blood serum and therefore in no way interferes with the processes of repair.

Because of the great variations in the commercial chloride of lime, it is indispen-

Take 10 cm. of this clear solution and add 20 cm. of a 10% solution of iodide of potassium and 2 cm. of acetic acid, or hydrochloric acid. Into this mixture let fall drop by drop a decinormal solution of the hyposulphite of soda (2.48 per 100) to the point of decolorization.

The number of cm. employed of the hyposulphite of soda, multiplied by 1.755 will give the weight N. of active chloride contained in 100 grammes of chloride of lime.

⁽¹⁾ Figures after Desfosses.

This dosage should be determined for each fresh lot of solution made. When the result differs from the proportion of 25% of active chloride, the ingredients forming the solution must be increased or reduced and to save calculation and simplify the preparation, Dr. Dufresne has prepared the following table to automatically prepare the solution in its proper proportions.

Percentage of active Chloride	Quantities to employ to obtain 10 litres of a 5% Carrel solution.		
	Chloride of Lime	Carbonate of Soda	Bicarbonate of Soda
20	250 gr.	125 gr.	100 gr.
21	240	120	96
22	230	115	93
23	220	110	88
24	210	105	84
25	200	100	80
26	190	95	76
27	180	90	72
28	175	87	70
29	170	85	68
30	165	82	66
31	160	80	65
32	155	78	62
33	151	75	60
34	147	73	59
35	143	71	57

Furnished with the correct solution, we now come to the "technic" of its application and the relation of these two to success in the treatment are of equal importance. Faultless technic with a faulty solution, and *vice versa*, are equally fatal.

The first act is to carefully clean the patient, open largely the wound with all its sinuses and cavities, remove all foreign bodies and substances, resect all dead and badly diseased tissue and then install the continuous irrigation of every anfractuosity, depth and surface of the wound and it is because this sounds and seems so simple that the average surgeon unacquainted with the details of the application usually fails to secure the desired results.

Once properly and correctly installed, the effects of the irrigation are observed and controlled by the bacteriological examination of the wound secretions by aid of the microscope. Carrel has thus introduced a mathematic and scientific control of treatment for wounds.

The chemical sterilization of the wound is secured by the aid of rubber tubes, one-half centimeter in diameter closed at one end, open at the other, the walls of the closed end having round perforations irregularly disposed for a certain distance on all sides. (See Figure 1).

The quantity of solution introduced into the wound is never great—just sufficient to keep the surfaces bathed—and is absorbed and evaporated by the dressings.

Two methods have been adopted to accomplish this: one, the drop by drop

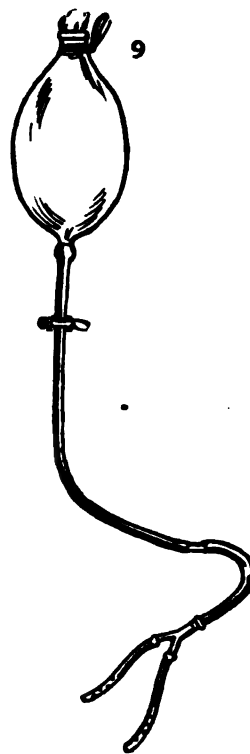


FIG. 9.—Glass reservoir with supply tube, suppression clamp and glass tube in supply tube and glass tube connecting supply tube with adductor tubes.

method; the other, the intermittent method, which latter is most generally employed and is here described.

The adductor tubes, those placed in the wound, are of different sizes. They are of red rubber, 20 to 40 centimeters in length, wall 1 mm. thick and from 3 to 6 mm. in diameter. They are equally resistant and flexible; sufficient to resist the pressure of

the muscles and dressings and to penetrate into the anfractuositities and corners of the wound.

(1). When not specially made with one end closed, it can be closed by a silk ligature, and from the closed end for the length of 5 to 15 cm. perforated by aid of a fine pair of scissors with 8 or 10 small holes all around. These holes are still better made by aid of a steel punch such as is used on leather.

(2). Another sort of tube used is open at both ends and perforated its full length. These tubes are so attached that the solution enters at both ends. (See Figure 14).

(3). Another sort of tube is open at the end and near this end a lateral opening is made quite large, permitting the liquid to escape, if the end becomes plugged up.

(4). The fourth category of tube is the same as N° 1, but the end having the perforations is covered with a spongy material like turkish toweling wound about with silk thread to hold it in place.

Any of these tubes can be lengthened by aid of a plain glass tube of the same caliber,

surface of the wound. (See Figure 14).

The glass tubes of three and four branches (Figures 4, 5) are composed of a main cannula, closed at one end, 6 to 7 cm. long and 7 mm. in diameter. Upon the side of this tube, at right angles, project the small branches, 2 cm. in length and 3 to 4 mm. in diameter. These cannulas resemble a comb; to these small branches are attached the perforated rubber tubes branching out into the wound.

In addition, it is necessary to have a straight glass tube 5 or 6 mm. in length and those of Y shape, 8 to 10 cm. long, and

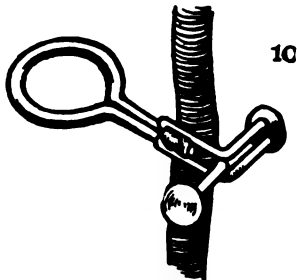


FIG. 10.—The suppression clamp.

inserted between the end of a perforated and plain piece of tubing. (Figure 2).

Glass Cannulas.—The perforated rubber tubes placed in the wound are united to the main supply rubber tube by aid of glass cannulas having two, three and four branches. (See Figures 3, 4, 5).

The main tube of N° 3 is about 3 centimeters long and 7 mm. in diameter. The two branches are 2 cm. long and 3 to 4 mm. in diameter. To these branches are attached two perforated tubes branching out into the wound or, one single tube, open at both ends, and having perforations thruout its whole length; the two ends being attached to the two ends of the Y, forms a half circle of the perforated rubber tube upon the



FIG. 11.—The nurse opening the clamp permitting the flow of solution into the wound.

both of 7 mm. in diameter, (Figures 6, 7) to reunite the large rubber conductor tubes; then a conical glass tube, 5 to 6 cm. long, 7 mm. in diameter at one end and tapering to 5 mm. at the other (see Figure 8) to unite a conductor tube of 7 mm. to the 5 mm. adductor tubes disposed in the wound.

The irrigating apparatus (Figure 9) comprises:

(1). A glass reservoir holding one litre, tapering to a small opening at the top and a projecting spout 7 mm. in diameter at the bottom; this reservoir is supported on a metal standard or by a board fixed to the foot of the bed. (See Figure 11).

(2). The rubber conductor, 7 mm. in diameter, is 1 m. 50 to 2 metres in length,

is attached to the spout of the reservoir and the other end to the glass tube to which are fixed the rubber adductor tubes, which are to be disposed in the wound.

(3). At a convenient point upon the rubber conductor is applied a clamp (in France that of Mohr is used) (Figure 10) which upon pressure, permits the flow of the solution to the distributing points.

(4). Below this clamp, a straight glass tube is inserted which permits the operator to see if there is a free flow of the solution. (See Figure 9).

Every two hours, the nurse opens the clamp which shuts off the flow of the solution and for a few seconds permits it to flow to the distributing points in the wound (see Figure 11). This flow is permitted to continue just long enough to bathe all the surfaces and is arrested the moment there is the slightest appearance of moisture upon the dressing.

Disposition of the Adductor Tubes in the Wound.—The tubes are disposed in



FIG. 12.—Adductor tube placed in an anterior surface wound.

the wound in such manner that every part and corner shall be bathed in the solution. As it is necessary for the liquid to bathe the surfaces of the wound liberally, the tubes are placed in direct contact with the wounded parts, they are not disposed with gauze between the surface of the wound and the tube, but the gauze is disposed above the tube. (See Figure 12).

In the disposition of the tubes, it is also necessary to take into account the position, form, and inclination of the surfaces to be bathed, and place them so that every part shall be wet.

When the wound is lateral, or posterior, we must exercise our ingenuity to accomplish the desired result.

The form of the wound also plays an important role. If a wound has but one opening, and that placed anteriorly, it can be filled like a vase and sterilizes easily (Figure 13), but if it has a second orifice at its base, then the process of sterilization takes longer.

Disposition of the Adductor Tubes Following the Form and Situation of the Wound.—As many tubes are employed as may be required to reach every corner, depth or anfractuosity of the wound to be treated.

When the wound is on the anterior surface and practically horizontal, it is easy to keep all the surfaces bathed in the solution. When the wound is inclined, the tube should be disposed at the highest border so the solution shades downward over all the surface. In place of a simple tube, one can be used perforated its whole length and attached to a Y shaped glass tube by both ends. This form is especially useful upon a stump after amputation. The fixation of the tubes in place is accomplished by aid of compresses wet in the solution, and by adhesive plaster on the skin, bordering the wound (Figure 14). The fixing of the adductor tubes in the place where the operator

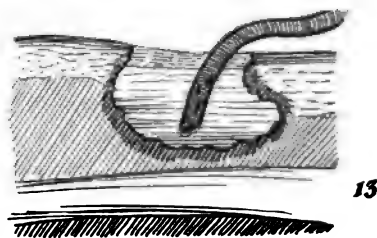


FIG. 13.—An anterior wound filled like a vase.

desires them should be done attentively for if they slip to the dependent part of the wound, the superior borders remain outside the zone of irrigation and consequently do not benefit from the treatment.

Wound in form of a seton. Where the axis of the seton is practically horizontal, a tube closed at one end and perforated as described, laid along the axis bathes all the parts; but if the seton is vertical, the solution escapes at once by the inferior opening. It is in a case like this that the tubes covered with sponge material like turkish toweling, remaining some length of time wet, keep the surfaces moistened.

Wounds having but one opening. If the orifice is at the top of the wound, the treatment becomes easy and simple; by introducing a single tube with one large lateral opening near the free end, to the bottom of the wound, the wound cavity is filled like a vase, the solution running in from the tubal opening at the bottom of the wound

and remaining until time to replace with fresh. The wound opening should be large enough to afford free entrance and circulation of the solution; such a condition lends itself to a rapid sterilization of the wound cavity, and if the wound has two openings, the condition above described should be favored as much as possible by plugging up the lower opening with cotton.

If the orifice of the wound, in place of being anterior, is posterior, the conditions are changed. If it is possible to have the patient lie face downward, well and good, but if this is impossible, then we must proceed by a wholly different process. It is practically without benefit to conduct the solution even to the extreme depth of the wound by the tube with only one orifice at its extremity, for the liquid runs out by its own weight as fast as introduced. If the

When the orifice is laterally located, we can produce a certain retention of solution in contact with the wound surfaces, by packing the cavity with gauze, wet, and kept wet by the solution, in addition to the tubes disposed as the shape and condition may best indicate and in every case, it goes without saying that the patient should be placed in the position most favorable to the application of the treatment.

Large wounds with more than one orifice. As a rule, these form the most difficult of the cases that come under the treatment, and more or less ingenuity must be exercised by the surgeon to overcome the tendency of the liquid to rapidly escape by the most dependent orifice. Often these wounds are complicated and rendered more irregular by fractures.

The perforated tubes must be selected

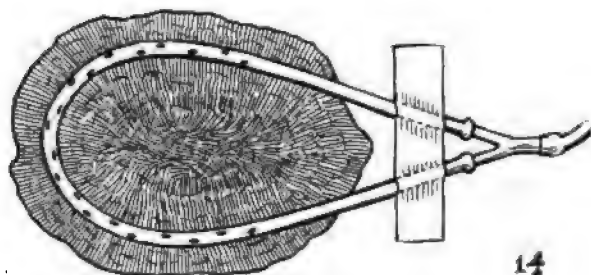


FIG. 14.—Adductor tube united to the glass tube in Y by its two ends, being perforated throughout the greater part of its length.

wound is narrow and deep, it can be maintained wet by aid of a tube surrounded by the soft cotton mesh heretofore described, which tends to act by capillary attraction; but if the wound is large, we use one or more tubes surrounded by the mesh material disposed with great care to penetrate to the most remote corner and inject the liquid by aid of a glass syringe with sufficiently strong pressure to force the liquid to every extremity, thoroly soaking the sponge tissue surrounding the tubes, which remain wet for some time; under these conditions, in place of renewing the supply of solution to the wound every two hours, as when employing the reservoir, it should be injected by aid of the syringe every hour or oftener if the condition of the size and shape of the wound, or a degree of fever cause the solution to disappear from the wound more quickly.

with care to see that they are amply long to reach the extreme depth of the wound by each diverticulum. To maintain the tubes in the positions placed, compresses of gauze wet in the solution are introduced into the orifices to hold the tubes against the walls of the wound as desired (Figure 15). The tubes once in place, they and the wound are covered with gauze pads, soaked in the solution to keep them in position at the surface of the wound. The tubes should be selected of a length that 15 or 20 cm. of the non-perforated tube will extend outside the wound and care must be exercised that none of the perforations of the tube are found outside the wound, as they permit the solution to escape into the dressings and on to the skin which serves no purpose except to make the patient uncomfortable and gives unnecessary work for the nurse.

Sometimes, when a dependent orifice

promises to render the treatment abortive, by permitting a too free escape of the liquid, it may be remedied by plugging with cotton and applying a square of rubber sheet or oiled silk, held tightly in place by adhesive strips.

After covering the wound proper with compresses, the skin surrounding the wound is covered and protected by squares of gauze coated with vaseline, sterilized, squares of 8 to 10 cm. are coated and ready in a container; they are seized by sterile forceps and applied to the skin bordering the wound, to which they immediately adhere. They form an excellent protection to skin which posterior to the trunk and limbs, has a tendency to irritation from the hypochlorite. The dressing is completed

pad from time to time to examine the position of the tubes and to see that there is a sufficiency of solution to keep the wounded surfaces wet.

If the arrangement, or number of tubes require, holes may be cut in the dressing to permit their exit at the points desired.

By the aid of the glass cannulas having a number of branches that may be required, and the Y shaped tubes, all of the adductor tubes in the wound are united to the main supply tube coming from the reservoir.

Finally, care must be exercised that the supply tube is so arranged as to insure an uninterrupted flow by gravity of the solution into the adductor tubes and the wound and it should be fastened in place in such

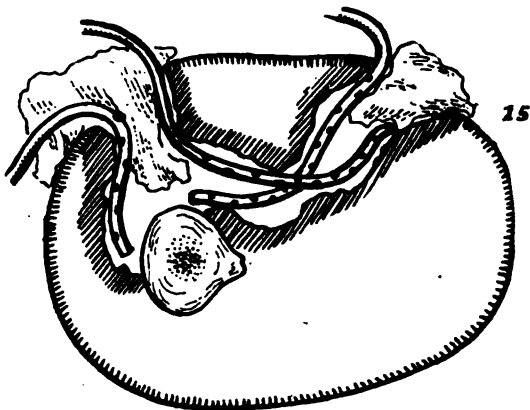


FIG. 15.—An anfractuous wound with several orifices. The tampons hold the tubes in the position desired.

by pads previously prepared, composed of a sheet of gauze, a sheet of hydrophile cotton, a sheet of non-absorbent cotton, and covered with another sheet of gauze. The side formed by the hydrophile cotton is applied next to the wound. The secretions are thus readily absorbed and evaporate without wetting the exterior which is protected by the nearly waterproof non-absorbent layer of cotton. This dressing should never be covered by any waterproof covering like rubber, or oiled silk.

It will be found useful to dress the wound so that it can be readily examined from time to time; in making the specially prepared pads above described, leave the top layer of gauze long enough to pass around the limb and be pinned to the opposite side. (Figure 16). This permits of lifting the

manner that it will not be displaced or disarranged by movements of the patients. (See Figure 16).

The member under treatment should be immobilized by plaster dressing or an apparatus in suspension and extension.

The dressings should be changed every 24 hours, but if during the interim they become uncomfortably wet, the outer layers can be changed for dry, without changing the whole or disturbing the tubes.

The regular change of daily dressings is very simple and can be done, when once accustomed to the routine, in a few moments. It consists in lifting the special pad covering the wound, verifying the unchanged position of the tubes, and observing that all the parts of the wounded surfaces are being subjected to the treatment.

If clots of pus are evident, detached in the wound, they are removed by aid of forceps. Those appearing on the surfaces of the wound remain untouched.

No washing out of the wound or cleaning of surfaces should be done, with the exception of changing if necessary or renewing the vaseline pads protecting the wound borders. A fresh pad is put over the wound as before, if a change is required.

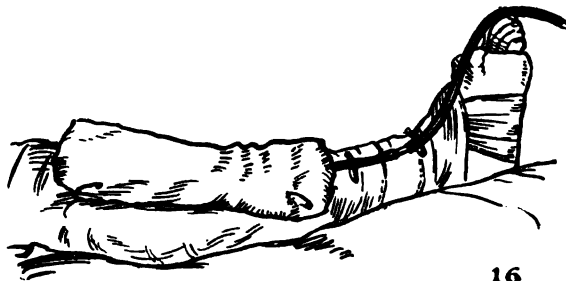
The mattress is protected by a rubber sheet and in a short time the nurse arrives at the amount and frequency of supply of solution required to bathe the wound without overflow or waste. As said before, the solution should not be permitted to flow out of the wound, but should be only sufficient to be evaporated by the dressing.

Emphasis must be laid upon the fact that the greatest care must be exercised to see that none of the perforations of the ad-

Once the wound is completely sterilized, it can be closed either by aid of adhesive bands or surgically by suturing.

Where the treatment is intelligently applied, the period required for the complete sterilization occupies from 8 to 12 days; but before closing the wound, the secretions should be subjected to a bacteriological examination. When the microbes have been found to progressively decrease under the treatment and disappear and the wound remains free from their presence for two or three days, the surgeon can close his wound in complete confidence.

The results of the treatment in the Carrel Hospital are truly remarkable. The wounds early take on a rose color, become free from inflammation, or odor, and one can daily note the new granulations of repair. One must see the work before he can really appreciate and believe all that it accomplishes.



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FIG. 16.—Fastening of cover pad and fixing of supply tube in the position desired.

ductor tubes remain outside of the wound; they conduct the solution into the dressings and on to the skin of the patient and invariably wet the bed and cause a bad mess generally which will quickly disgust every one with the treatment.

To avoid all confusion of the Carrel solution with the physiologic, or distilled water, a few drops of permanganate can be added, giving it a rose color.

The nurse should be cautioned to open the clamp, releasing the flow into the wound, commencing with a few seconds only and increasing to the limit of safety. Too much solution does not manifest itself at once, but when it appears upon the surface of the dressing, it continues in an apparently endless flow by capillary attraction and soon the bed is disagreeably wet.

The total quantity of solution injected in 24 hours varies with the size and extent of the wound, from 250 to 1,000 cm.

The surgeon should not be discouraged at his first failures; as I said at the outset, success depends upon the technique of the application and in no procedure is it truer than in this that "Practice makes perfect."

146, Avenue des Champs-Élysées.

Disease Spreaders.—Goler in a recent issue of the *N. Haven Monthly Bulletin* says "there are ten ways of spreading diseases and that by the ten fingers. Keep the mouth and teeth clean and the hands away from the mouth. Vaccinate for whooping-cough. The rash and scales in scarlet fever have nothing to do with infection; the throat is where the contagion lies. In diphtheria, the antitoxin has no effect on germs or membrane, but prevents the deadly effect on the heart. Fingers in the mouth are responsible for much of typhoid fever."

THE NEED FOR COOPERATIVE COLONIES FOR EARLY TUBERCULOSIS PATIENTS.

BY

HOWARD CRUTCHER, M. D.,
Tularosa, New Mexico.

For many years it has appeared to me that a cooperative colony for the benefit of the early victims of tuberculosis would prove of immeasurable value, not only to those enlisted, but also to the world at large.

Several years ago, moved by close contact with some pitiable cases, I wrote an open letter to the editor of *Harper's Weekly*, making certain practical suggestions which I deeply hoped that some aspiring millionaire, desirous of "that good fame, for which men vainly decimate the throng," might see the wisdom of adopting. Col. George Harvey, the Bacon of modern thinkers and the Macaulay of contemporary writers, published my letter, but nothing worth while came out of it.

I have now, after mature consideration, decided to lay the case before the medical profession, the only profession, after all, worth the while, thru the columns of AMERICAN MEDICINE.

Let one case suffice for purposes of illustration. Patient: male, aged 26, American, single, printer; lost 22 pounds in six months; condition diagnosed as incipient tuberculosis by Frank Billings, confirmed by William E. Quine and W. A. Evans; advised to take up outdoor work.

But where? Ah, "there's the rub," and a pretty hard rub it is for many. To remain indoors is to court death; possibly, by keeping in the open air may mean renewed vigor and certainly prolonged life.

Again, where? Well, somewhere, provided some one will provide the means,

where men may work their way back to health, set type, bind books, cultivate flowers, chop weeds, gather vegetables, prepare foods, perform skillful and expeditious surgical operations, verify laboratory products, adjust time pieces, and all the while be able to look the world in the face as honest men earning their daily bread, toasted and buttered to taste, in the sweat of their own brains.

If, for a moment, I may insert one illustration, perhaps this one will suffice: One day, wandering amongst the surpassing beauties of the southwestern plains, I came upon a little dwelling whose only occupant I happened to know very well by reputation. He was an eastern banker. A single glance at his little bookshelf revealed instantly his moral worth. I could not help tendering some word of heartfelt sympathy. To which he replied, with lips firmly set, "Well, I'm willing to do anything honorable to get well."

All that is needed to carry such a plan into practical effect is some man or woman with ready means, possessed of an active imagination and some knowledge of the rudiments of history. No "mushroom rich civilian" nor tinhorn millionaire need apply. It is within recent memory that a silly upstart spilled a million dollars in promoting an enterprise that started in a mudbank and stopped short of nowhere. Mere silliness is not genius. The bumptious imposter who professed to have invented the Sims' speculum has been forgotten save by those who have dug out the facts.

There is in the far-away southwest an available power-site, flanked by glorious mountains, surrounded by fertile plains, which may be had almost for the asking. This area may be cultivated with profit to

an almost unlimited extent. It would be a beacon light to thousands who without it will languish and die. No pauperism. Every one for himself and for every one else. No favorites. Science and business combined, with science to handle the throttle. Scientists, poets, artists, plowmen, weavers, spinners, tailors, gardeners admitted, but all under the direction of such authorities as will command the instant and spontaneous confidence of the world of science and progress.

AMENORRHEA AND STERILITY.

BY

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During the author's gynecological practice of about twenty-seven years' duration, cases of simultaneous sterility and amenorrhea in married women have been rather of rare occurrence.

The following case, sent to me about three years ago, is therefore of considerable interest: Mrs. M. B., aet 30, married ten years. Never menstruated, in any way, shape or manner. Sterile since marriage. No similar condition in any other member of the family or relative.

On examination, abdominal and bimanual, find infantile uterus and ovaries, and an antiflexion. Also a conical cervix and a pin-hole aperture. She stated that about a year prior, a physician had dilated the cervix and resorted to curettage, without benefit.

I introduced a Gehrung pessary, and adopted the usual routine treatment, including the passage of the uterine sound and the administration of the iodide of iron, syrupus

ferri hypophosphiti, Fowler's solution, with good results, as far as the chlorotic condition was concerned. But her sterility and amenorrhea continued about the same. The diet was carefully regulated, all delicatessen and store foods being strictly interdicted. The bowels were carefully looked after. I tried ergot, aloes, sulphate of iron, oil of savine, etc., without altering the uterine condition. But after the use of oxalic acid in quarter grain doses three times daily for two months, supplemented by the anteroposterior Faradic electric current externally, curettage and douches, menstruation gradually appeared, and after six months she became pregnant, the eventual result being a normal labor. A girl infant was born without complications.

Prof. Otto H. Rohde successfully treated a case of sterility by cervical and rectal dilatation, the use of podophyllin and leptandrin for regulating the bowels; and the eclectic remedies "cratycus," "macrotis" and "pulsatilla," as cardiac tonics. But this was an ordinary case, without amenorrhea.

Altho not a parallel case, R. B. Slocum, M. D., of Wilmington, N. C., in the *Southern Medical Journal* for August, 1915, says: "The following case is reported on account of its rarity. Cases are reported of orchitis and mastitis, but not, as I can find, of ovaritis, without abscess, in typhoid. The patient is a woman 42 years old. Menstruation began at 15 and was regular up to the 20th year, when she became pregnant. She had been married 26 months before becoming pregnant. This child was born in her 20th year, and a second one was born two years later. After the second delivery, she had an attack of puerperal fever, but menstruated regularly afterwards until her 28th year, when she had typhoid fever. During this time, from her 22nd to 28th year, there was no pregnancy, but menstruation was normal and regular. The typhoid was very severe and accompanied by convulsions (28 in one day, according to her husband's story). Altho she was in bed about six months, she stopped menstruating during the fever, and has never menstruated nor become pregnant since. That was 14 years ago, and during that time her disposition has changed, becoming more and more neurotic and hysterical. Examination now shows small ovaries."

96 New Jersey Avenue.



Injection Method of Treating Hemorrhoids.—Allton L. Sherman revives an old method of treating this condition under strictly aseptic measures and only in selected cases says a recent writer in the *N. Y. Med. Jour.* The contraindications are, first, a tight or irritable sphincter. If occurring, there must be divulsion of the sphincter for a week before the injection. Secondly, no ulcerated surfaces must exist near the site of the intended injection, but must be cured before the procedure is carried out. Third, acutely inflamed hemorrhoids should not be injected. Phenol in various strengths is used, and Sherman combines it with sweet almond oil, as it both dilutes the phenol and localizes its action and has less tendency to solidify in solution with more than 30 per cent. phenol than any other oil. Technic is as follows: Patient is placed on the side opposite to the hemorrhoid to be treated, and a cleansing enema is given. Speculum with a slide is introduced into the rectum, and slide withdrawn sufficiently to allow hemorrhoid to fall into cavity of the speculum. If hemorrhoid is large and nonsensitive, a strong solution, 50 per cent., of phenol with sweet almond oil is indicated; if hemorrhoid is small and sensitive, an 8 per cent. solution is to be used. Introduce the point of the needle into the cavity of the tumor two-thirds of the distance from base to tip, and inject three minims of the solution. If the tumor blanches sufficient solution has been injected; leave the needle in position for a moment, and if enough solution has been given, withdraw it with a rotary motion. If there is no blanching of the tumor, introduce three minims more and wait another minute, injecting twelve to fifteen minims if necessary to make it blanch. Do not use more than this amount. Treat but one hemorrhoid at a single treatment. Have the

patient lie still for ten minutes before getting up. A few suppositories containing opium one grain and chloretone one grain, may be used afterward when the pain begins, and for every four hours until the pain ceases. Often they are not required. It is to be understood that this treatment is but a palliative measure, as the underlying cause must be reached to effect a final result.

Aluminum as a (Possible) Bio-Chemical Element and Its Relation to Cancer.

—W. Bryant Guy in *Medical Times* (July, 1917) has found aluminum beneficial as a therapeutic agent when given internally in various disorders as follows:

As a hemostatic its action is certain and rapid in hemorrhage of the uterus, as in child-birth, fibroids and cancer; in hemorrhage of bladder (one case of over a year's duration following dilatation of a stricture), also in bleeding hemorrhoids. Because of its powerful action on all mucous membranes it is especially valuable in nasal, aural and bronchial catarrhal disorders, also in cases of phthisis accompanied by fetid breath, in chronic diarrhea and constipation and in certain forms of gastric and intestinal conditions.

Externally aluminum is in common use. It destroys exuberant growths as in seborrhea, ringworm, psoriasis and is beneficial in acute and chronic eczema, granulating sores and wounds, and in the treatment of burns and similar injuries.

Aluminum being destructive of excessive cell growth, it necessarily follows that those elemental salts which stimulate cell production should not be administered to cancerous cases.

Among these elements that are incrimi-

nated are calcium, phosphorus, nitrogen and potassium, especially potassium iodide.

Too many cases are aggravated and made malignant by the use of the last named drug and when the diagnosis is in doubt a Wassermann test should be made.

It can be readily understood that where excessive cell growth is at fault, those remedies which stimulate cell production should be scrupulously avoided. A diet eliminating meat, fish and eggs should be insisted upon, at same time complete evacuation of lower bowel is most important.

From the results obtained by these measures, coupled with the administration of aluminum in proper dosage, I have not the least hesitation in declaring that cancer in an early stage can be cured, its recurrence after operation avoided, and still more important its non-appearance among our people assured.

To make a too definite claim as to the curative value of aluminum is at present unnecessary and unwise, yet a few cases may be in order as to the results obtained by administration of aluminum in cases of cancer both early and late. I have chosen a few unmistakable typical cases out of many in order to show its therapeutic value.

At the outset it was difficult to find a soluble form of aluminum, but finally two were found, *viz.*: solution of aluminum acetate 8%, U. S. P., the other aluminum lactate. The administration of aluminum acetate solution internally, in doses of from 3 to 9 drops, has produced some very interesting results.

Nature and Treatment of Sciatica.—

Pershing (*Colorado Medicine*, March, 1917) draws attention to the fact that many cases of sciatica are due to some bony lesion or displacement in the region of the sacrum, or to other organic cause, the correction of which is the only means by which cure can be obtained. In the cases of true sciatic neuralgia or neuritis, syphilis or some form of toxemia should be sought as the cause and treatment directed to its cure. In the so-called idiopathic cases the patient should be placed at rest in bed with the thigh and knee supported in slight flexion; elimination should be promoted; a light diet prescribed, and salicylates given

in large doses. Counterirritation may be applied along the course of the nerve by means of small cantharides blisters or the light use of the cautery. In the event of failure of these means one may try injection of the nerve with a solution of novocaine of the following composition:

B Novocaine 0.1
Normal saline 100.0.

Sterilize by boiling, and when cool add 0.6 to 1.2 mls of one to 1,000 solution of epinephrin.

About sixty mls of this solution should be used. If this injection of the nerve trunk fails then one may try the epidural injection of two mls of a one per cent. cocaine. This injection should be made in the mid-line three inches above the tip of the coccyx so as to enter the sacral canal.

Skin Erosions Treated with Paraffin.—

A writer in the *Jour. A. M. A.* (May 12, 1917) says in the treatment of severe burns, or of acid corrosions, or of wounds that fail to epitheliate, it is advisable to use the paraffin treatment. We have had eminent success with this method of therapy, and we shall describe here how the wax is made and how it is applied in order to obtain the best results.

The ingredients are mixed in these proportions:

Paraffin (Gulf Refining Co., Pittsburgh)	70.0 gm.
Liquid petrolatum, U. S. P.	3.0 c.c.
White beeswax	10.0 gm.
Rosin	7.0 gm.
Resorcin	0.2 gm.
Sudan III	0.05 gm.
Alcohol (95 per cent.)	10.0 c.c.

The paraffin and the oil are melted in a casserole over asbestos board, the direct fire being used. The resorcin is dissolved in the alcohol, and added drop by drop to the molten paraffin with constant stirring. The mixture is now heated until all the alcohol is evaporated. The beeswax is stirred in until melted, heat being used if necessary. Then the rosin is added and mixed in thoroly while the casserole is being heated. The mixture can be poured into molds and cooled.

It is possible to incorporate a number of ingredients in the West Penn wax, as salicylic acid, gum benzoin, etc., which may be useful in the treatment of skin affections. These substances are incorporated by dissolving them in alcohol and thoroly admixing them in the melted paraffin until all the alcohol has evaporated.

As a desirable and necessary preliminary when a severe burn of recent occurrence presents itself, we puncture all the blebs and remove all the dead skin. The melted wax is now applied directly over the burn by means of a camel's hair brush. A piece of gauze or a thin piece of cotton is placed over this application, and this is again painted with wax so that the gauze or cotton is firmly embedded in the wax. The whole surface is now bandaged with loose cotton. By permitting a piece of the cotton or gauze to project between the two layers of wax, it is quite feasible to remove the wax by one gentle pull. When the wounds are very painful and it is not practical to paint the wound with a brush, the wax is applied to the surface by running a strip of gauze thru the melted wax and applying directly.

If the wound is wet it is necessary to dry it with hot air; otherwise the wax will not stick to the surface. This can be done by means of an electric hot air generator, commonly used by barbers.

In old wounds or burns that are septic, it is essential first to render the surface clean by means of Dakin's neutral solution of chlorinated soda, and then treat it with the wax as if it were a freshly burned surface.

Diarsenol in Tertian Malaria.—Neff, (*Journal American Medical Association*, October 7, 1916), in an interesting communication reports five cases of chronic recurrent tertian malaria in children treated with diarsenol. All of the cases had proved refractory to quinine. Diarsenol was given intravenously in doses of 0.1 to 0.2 gram. The initial dose in all cases was 0.1 to 0.2 gram. These controlled the symptoms and dislodged the parasites. In two of the cases no further treatment was given as the patients were taken from the hospital. In the remaining three, second or third doses were

necessary as the parasites returned to the peripheral blood and paroxysms recurred after several weeks. All three, however, were permanently relieved after additional doses, two or three in number had been given. These results agree with those reported by some other writers in proving arsenobenzol effective in malaria with quinine fast parasites.

A "New" Preparation for the Treatment of Syphilis.—Emulsion of ten per cent. mercury benzoate with two per cent. quinine and urea hydrochloride in white petrolatum for intramuscular injection. Give ten minims three times a week. Take care that syringe and needle are cold and that the injection is really into the muscle and not into the subcutaneous fat. Recommended by Maurice F. Lautman (*Med. Rec.*, Jan. 13, 1917).

Epinephrine in Nasal Bleeding.—Lapat (*Journal American Medical Association*, October 14, 1916) describes a spontaneous recurrent epistaxis, usually due to ulceration over capillaries or vessels in the interior nares, and at times exceedingly difficult to locate. He declares, however, that the difficulty may be controlled thru the application of epinephrine to the anterior portion of the septum. This blanches the surrounding mucosa excepting at the points of bleeding. The curative treatment also often calls for cauterization of these points with ninety per cent. trichloroacetic acid.

Tickling Cough.—A. Kinsey-Morgan (*Lancet*, December 23, 1916) recommends codeine for the relief of tickling cough, especially that which follows influenza, tuberculous laryngitis, etc. For this purpose he prescribes it in the following mixture:

℞ Codeinae	0.1
Acidi citrici	0.3
Syrupi tolutani	} āā16.00
Syrupi pruni virginianæ..	
Aquæ	

M. et. S.: One teaspoonful.



Mammary Extract for Uterine Fibromyomata.—W. A. Briggs (*Endocrinology*, April, 1917, p. 188) expounds a theory as to the causation of uterine fibroids based largely upon his therapeutic results following a routine treatment in which mammary extract is a prominent part.

He believes that the exciting cause of these new growths and the accompanying hemorrhages is uterine hyperemia of ovarian origin, and that the antagonistic effect of the mammary principle is helpful because of its anti-ovarian influence.

Briggs reports a number of clinical experiences to establish his theory and states that "in a large majority of cases receiving mammary extract, the menorrhagia is effectively controlled and under its continued use large uterine fibroids often disappear even during the early reproductive period."

The dose of mammary substance recommended is ten grains three times a day, tho in severe cases Briggs prefers mammary extract one gram four times a day combined with extract of ergot 0.2 gm. and extract of hydrastis 0.1 gm. with each dose and also, in some cases, irradiation of the ovaries every three weeks. The cases reported are encouraging evidence that this procedure is helpful and in some of the comments on this communication Bandler of New York and James of Sacramento speak favorably of this method.

Thyroid Extract for Lagging Metabolic Activity.—Many chronic disorders are complicated by what has recently been called "chemasthenia" or lagging metabolism. The cellular activities are much below par and this means that nutrition is poor and elimination defective. Not always is a modified thyroid chemistry responsible for these

changes; but very commonly the thyroid will be lagging and thus bad is made worse.

This is not merely a clinical finding. Not a little experimental work has demonstrated the importance of the thyroid hormone as a metabolic stimulant, both in pathology and therapeutics. Recently Krogh of Copenhagen (*Ugeskrift for Læger*, Dec. 29, 1916) gives extended figures showing the effects of thyroid treatment upon the standard metabolism, and small doses of thyroid caused a pronounced increase in the elimination. We know that in hyperthyroidism metabolism may be increased to 80 or 100% above normal, and that the cretin's elimination is always reduced and, too, that thyroid promptly increases the chemical exchanges.

Hence it should be a rational procedure to attempt to augment slow metabolism with thyroid therapy, even tho there may be no direct evidence that the thyroid gland is specifically at fault. It is suggested that one half a grain of the U. S. P. thyroids be given three times a day for one week, omitted for two or three days and started again, the alternation being continued for one or two months, urinary studies being made the while and the effect of this treatment being measured.

If the result is good, and it is often very good, according to Hertoghe and Leopold Levi we are justified in assuming that at least a part of the etiology of the defective metabolism was in the thyroid and the response to thyroid treatment is the proof.

Adrenalin in Anaphylactic Accidents.—The severe and alarming reaction to certain sera or vaccines known as "anaphylaxis" is a most disconcerting experience for a physician to pass thru. In suddenness and

severity it is quite similar to the "nitroid crises" occasionally accompanying the injection of salvarsan and recently mentioned in this department.

Parhon and Bazgan (*Comptes rendues de la Societe de Biologie*, Paris, 1916, lxxix, 506) report having used adrenalin injections in soldiers who exhibited signs of an anaphylactic reaction following a second (heavy) dose of cholera vaccine. Following a subcutaneous injection of one mil. (15 minims) of the standard 1:1000 solution, all signs of anaphylaxis disappeared promptly. These authors suggest such injections as a preventive measure.

Pituitrin in Obstetrics.—The use of this remedy is being modified somewhat as clinical experience with it is broadened. Recently Rawls (*Virginia Medical Semi-Monthly*, 1917, xxi, 535) outlined some findings which are of interest, as they harmonize with our personal opinions and differ somewhat with the routine method of using this useful remedy; not merely in obstetrical but in general practice.

The action of pituitrin lasts from forty-five minutes to an hour and a half. No patient should be left for at least 1½ hours after a dose has been given.

Pituitrin is often made more active when some local stimulus is also given. For instance a distended rubber bag in the cervix plus pituitrin was effective where other means and pituitrin alone had failed.

In surgical cases Rawls gives one tube every 4 to 6 hours as a routine practice, beginning before the patient leaves the table.

No cases should be catheterized until pituitrin has been tried.

Corpus Luteum in Gynecological Practice.—F. B. Block and T. H. Llewellyn, (*Am. Jour. of Obstet.*, Mar., 1917) in discussing the use of various hormone preparations in gynecological cases, state that the best results from corpus luteum were obtained from relatively small doses. In eleven cases of hyposecretion of the ovaries, due to inflammatory and sclerotic changes in these organs incident upon pelvic disease, corpus luteum extract was given in doses

of two grains three times daily for one to six months, supplemented by hot douching and local applications of magnesium sulphate in glycerin. Eight patients were markedly improved, oligomenorrhea, flushes and dizziness, nervousness and itching being relieved whenever present; headache, lassitude and backache were relieved in the majority of cases. In two cases of natural menopause, vulvar pruritus and vasomotor symptoms were relieved, respectively, by 6 and 15 grains of the extract daily. In a case of infantile uterus with bilateral ovarian pain and scanty flow at the menses, 6 grains daily for two months brought relief, tho in a case of long standing surgical menopause no improvement followed. The beneficial results from corpus luteum seem to depend rather upon the amount of ovarian tissue remaining in the body than upon the dose of corpus luteum given.

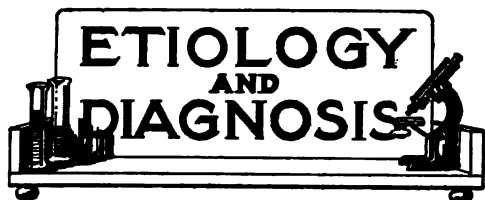
Adrenalin by Mouth in Nephritis.

I. Harris (*Liverpool Medico-Chirurgical Journal*, 1916, xxxvi, p. 85) reports having used adrenalin in the treatment of nephritis for a considerable time. He recommends it for its diuretic effect as well as for its evident influence upon the reduction of albumen passing thru the kidneys. A number of Harris' patients have done well under this treatment and he remarks that they were all cases where the usual methods had produced little or no marked benefit.

The dosage varied from five to ten minims of the standard 1:1000 solution given by mouth once or more times a day. It may be given as often as four times a day. Harris believes that there is some relation between the pressor effect of adrenalin and its obvious value in the treatment of nephritis.

Previously this treatment has been outlined in this department in reports of Borelli, Silvestri, Fede and other Italian physicians who showed that adrenalin exerted a beneficial effect in certain forms of nephritis.

Migraine.—"Chronic migraine is a condition that may be due to hypothyroidism, tho the patient may show none of the usual signs of insufficiency."—Fred Ellsworth.



Animal Parasites in Cutaneous Diseases.—Miller in his interesting article in the July issue of the *Medical Council* says that according to Stelwagon's classification of cutaneous diseases, under class IX are found an important group of parasitic affections. Miller has been much impressed with the growing importance of this group. Insects are of vital importance to man as agents in the transmission of certain diseases. In dermatology and in general medicine no subject is being studied more today by both physicians and biologists. With this fact in mind he begs leave to describe as briefly as possible the more ordinary types of parasitic organisms, both animal and plant—those we meet in our every-day life—with just a word on the various dermatoses and constitutional conditions resulting therefrom, together with certain measures taken to eradicate infection.

The group includes, in part, the following animal parasites: The *Pediculus capitis*, *corporis* and *pubis*; *Pediculoides ventricosus* (grain itch); *Cimex lectularius* (bed bug); *Sarcoptes scabiei* (itch mite), and a miscellaneous group, which includes fleas, ticks and mites.

If the European war has done nothing else, it has at least been the cause of disseminating much information concerning parasites, especially the louse, of which hitherto most people have had but a theoretical knowledge.

Pancreatitis and Biliary Affections.—Heyd in his valuable paper in the June issue of *The Buffalo Medical Journal* comes to the conclusion that:

1. Pancreatitis is probably due to both infection and chemical irritation.

2. The very intimate lymphatic connection between the lymphatics of the pancreas and the biliary apparatus is probably a factor in many cases.

3. Gallstones have a distinct bearing upon the production of pancreatitis, being present in approximately 50 per cent. of all cases. The incidence of pancreatitis and biliary disease is probably dependent upon the anatomical variations in the terminal portion of the ducts.

4. The passage of a gallstone with injury and dilatation of the sphincter and ampulla of Vater probably initiates infection from the duodenum.

5. Pancreatic lithiasis probably acts in like manner.

6. By reason of its peculiar anatomy infection once induced in the pancreas is probably not spontaneously cured.

Pyloric Obstruction in Infancy.—Schorer in an article appearing in the July issue of *Medicine and Surgery* says that obstruction at the pyloric end of the stomach has vomiting as its commonest symptom and dilatation of the stomach as its most frequent sign. However, neither vomiting nor dilatation of the stomach is seen only in pyloric obstruction, and, therefore, unless careful observations are made, cases of pyloric obstruction are frequently not detected for some weeks. Indeed a large percentage of cases of obstruction at the pylorus are first diagnosed as improper feeding, and many a baby is taken from the best food an infant can have—namely, that from the mother's breast and put on all the milk formula and proprietary foods. Pyloric obstruction in infancy is now generally spoken of as pyloric stenosis, and practically all we know of the condition has been developed in the last decade. Rotch in 1903 says: "Congenital stenosis of the pylorus in infants has been described but its existence has been questioned." In these twenty years much confusion has arisen, bitter controversies have resulted, progress has been retarded, and the successful treatment of individual cases of pyloric obstruction in infancy much interfered with. Credit for the necessity of differentiation in pyloric obstruction in infancy must be given to the surgeons, but we cannot leave to the surgeons our differential diagnosis. Schorer in his conclusions and summary says: Pyloric obstructions in infancy were long overlooked and today there are many physicians who do not know of their existence; and when they see patients with pyloric stenosis take from them the best food, mother's milk, and put them on artificial and proprietary foods that are lauded by the detail man. We do not need mother's milk for the feeding of infants, but in pyloric stenosis we can use mother's milk to the best advantage. Recurrent projectile vomiting in otherwise healthy infants should always arouse suspicion of pyloric obstruction. Pyloric obstruction in infancy is certainly of two types or of different degrees of severity. In one, operative treatment is indicated and, in the other, medical treatment is as definitely indicated. In all cases there probably are pathological changes at the pylorus: this in some progresses to being incompatible with life, in others it comes to a standstill or recedes.

Acidosis.—A writer in the *New England Medical Gazette* (July, 1917) says that the conditions in which acidosis may occur are as follows:

1. Those with over-production of acid, due to deficient oxygenation, as severe exercise, mountain sickness, gas poisoning, and probably acute anemias;

2. Those where a primary lack of oxygen causes a raising of the normal threshold in compensation, as in high altitudes, and probably pregnancy;

3. Metabolic conditions in which abnormal acids are produced in large amounts, as diabetes,

starvation, post-operative toxemia, and the diarrhea and cyclic vomiting of children;

4. Conditions of renal insufficiency, such as interstitial nephritis, pyonephrosis, and possibly the active hyperemia found in pneumonia and some other infections.

In pneumonia the cause of death is very frequently acidosis, and the value of the fresh-air treatment of this disease may be partly in the improved oxygenation and prevention of rebreathing, these factors tending to decrease the acidosis.

If excretions of salts is good, alkali therapy will probably be of value in treatment; efficient diuresis must be maintained by a copious intake of water. In cases of acidosis due to renal insufficiency, however, as for instance nephritis and pneumonia, alkalies are better not given, unless we use substances largely excreted in the feces, like chalk or bismuth subcarbonate. Purgation aids the elimination of acids by the intestinal route. Meat should be avoided in the diet. Fresh air in motion is valuable, as may be also oxygen at high altitudes. Finally a word of caution as to the use of morphin in acidosis is given, inasmuch as this drug depresses the respiratory center, thereby counteracting the hyperpnea, Nature's effort to eliminate the volatile acid, carbon dioxide.

Carriers of Endameoba Histolytica.—Emrich says in *Jour. American Medical Association* (May 19, 1917) the prevalence of carriers of endameoba histolytica among the people of endemic countries shows the important role which they play in the dissemination of endamebic dysentery. These carriers are always liable to develop dysentery or liver abscess and because they continue for an indefinite time to pass large numbers of encysted endamebas in their stools, are a constant menace to the community.

Experience has shown that while subcutaneous injections of the soluble salts of emetin are very effective in the treatment of acute dysenteries and liver abscesses of endamebic origin, they fail in many cases to eliminate encysted endamebas from the intestine. The other drugs that have been employed with the possible exception of thymol and male fern, are either more or less ineffective on carriers or require long and disagreeable courses of treatment.

The oil of chenopodium used by the author had been exposed to tropical light and temperature for over a year, so undoubtedly had lost some of its potency. The treatment found most effective was (1) magnesium sulphate, from ½ to 1 ounce, at 6 a. m.; (2) oil of chenopodium 16 minims in gelatin capsules at 8 a. m., 10 a. m. and 12 m., and (3) castor oil 1 ounce containing chloroform, 50 minims, at 2 p. m. This dosage is for adults; for children it should be reduced according to age.

One of the essential factors in the treatment is the preliminary purgation with magnesium sulphate.



Treatment of Acne Vulgaris.—Dyer, in a recent issue in the *New York Medical Journal*, declares that the treatment of acne vulgaris conceives the attack upon a local disorganization of the sebaceous glands resulting in the appearance of various sized papules and pustules, in all stages of development from a simple, plugged gland duct (comedo, or black-head) to a deep seated, almost furuncular pustule. There is nearly always associated dietary inconsistency and intestinal irregularity expressed by occasional indigestion and by habitual constipation. The treatment must be both local and general. Local treatment should be begun with the systematic free opening of all pustules, discharging them, and applying to each equal parts of carbolic acid and tincture of iodine. The comedones should be removed and at each seance this can be materially aided by freely cleansing the face with benzine on cotton pledgets. This procedure not only removes the accumulated fat on the skin, but will remove the inspissated fat from the orifices of the ducts and superficial glands. The mechanical extraction of the comedones is therefore made easier.

Between visits, the patient may keep the skin softened and clean with an ointment containing:

Acidi salicyli	2
Sulphuris precipitatis	4
Tinct. benzoini	1
Adipis zenzoinati	30

Resorcin in three to five per cent. strength may be added when there is any suggestion of dandruff, which is frequently associated. With the defervescence of the pustules an astringent lotion may be employed, the lotio alba being an example:

Zinci sulphatis	8
Aquæ rosæ	60
M. et adde.	
Potass. sulphuret	8
Aquæ rosæ	60

The liquid is to be applied freely and often and allowed to dry on. Another serviceable lotion would be:

Zinc oxidî	4
Talci venetian	4
Sulphuris precip	4
Glycerini	4
Spts. camphoræ	30
Hamamelis destillat	120

This lotion is to be applied freely and often and allowed to dry on.

The use of short exposures to the X-ray; the use of compresses of one to 1,000 solution of bichloride of mercury; the destruction of in-

dividual lesions with a thermocautery point (microbrenner); and the free, rapid sparking with the high frequency current are offered as alternatives.

Autogenous vaccine or stock mixed vaccines, or the combined furunculosis, acne bacterine, and staphylococcus, are of service in the types of acne vulgaris, where the pustules predominate. The technic of using the vaccine is important. The dose should be small (250,000,000) at the beginning; should be repeated in three to five days in the same dose; then increased after five more days to not more

cara, thirty minims, in combination with Fowler's solution, three to five minims, and citrate of soda, ten to fifteen grains, to be taken in water after meals. A serviceable combination is chlorate of potassium three grains, lactate of iron three grains, with extract of nux vomica one-half grain, extract of cascara one-fourth grain—to be taken in capsule or pill after meals.

The dietary should exclude all pastry, excess of sweets, and should employ the full use of fruits and green vegetables. Exercise is necessary and the free use of soap and water is to be commended.



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UNUSUAL APPARATUS USED TO SAVE LEG SEVERELY INJURED BY SHELL.

Apparatus employed in effort to save leg severely injured by a shell. The leg is held in place and moved as necessary by ropes and pulleys. The shattered bone is kept from growing together too short by weights and spring device of heavy rubber. X-ray pictures are taken from time to time to see that the bones are growing together properly. This system is used extensively in the American Ambulance Hospital at Neuilly-sur-Seine, France, and has been the means of saving limbs that otherwise might have been necessary to amputate. The photo was taken in the American Ambulance Hospital. Despite his state the soldier manages to keep a cheerful and hopeful smile on his countenance.

than twice the original dose; after another five days, if no reaction, a dose with fifty per cent. increase may be employed and the treatment suspended pending observation of improvement. If there is no improvement some other treatment should be tried.

Internal treatment of acne is usually necessary. It should aim at keeping the bowels open and the skin active. Powdered rhubarb and bicarbonate of soda, thirteen grains of each, may be given before meals, and fluid extract of cas-

Dysentery.—Boggess in *Miss. Valley Med. Jour.*, May, 1917, says it is inadvisable to check dysentery by the use of opium and the astringents. In the early stages—castor oil is a good remedy, given in an initial dose of one ounce for adults, or in one drachm doses every hour or two for a number of doses. Small doses of calomel are sometimes found efficacious. In severe epidemic cases, emetin hydrochloride is used just as in the amebic type of dysentery. Pills of ipecac that are salol coated can be

given without disturbing the stomach. For intestinal antiseptics and sedatives—5 gr. salol; 10 gr. urotropin; 25 gr. each of bismuth subnitrate and bismuth subgallate in suspension of some pleasant vehicle every four hours. In the early stages belladonna (atropin). It is an intestinal sedative. It lessens the watery stools. It relieves the intestinal congestion and is a tonic to the intestinal musculature.

Local treatment by enemas is recommended. Potassium permanganate 1:1000; solution of quinine 1:1000; hydrogen dioxide 25 per cent. solution; one ounce fluid extract of ipecac to two quarts of water.

Massage in Dry Gangrene.—Graham, in *Medical Record*, (March 10, 1917) after reporting successes that followed manipulation, concludes that when massage is of benefit in Raynaud's disease it shows its good effects quickly by improvement in circulation, warmth, comfort and suppleness. Tissue vitality may be maintained and improved by massage, and even destruction when beginning may be recovered from. The benefits are permanent; consequently action upon vaso-motor nerves and their central connections in brain and spinal cord is evident.

Symptoms of Raynaud's disease seem to be capable of affecting the vessels in almost any part of the body, and this suddenly or gradually, and most varied disturbances may thus find explanation, such as sudden attacks of insanity, unconsciousness, asphyxia, hemoglobinuria, colicky pains, dead fingers, etc. To all of which massage may be applied with the idea of improving the circulation in a remedial manner. Massage may even forestall operation or amputation.

Treatment of Erysipelas with Iodine.—Keppler in the *Medizinische Klinik*, (Dec. 31, 1916) advocates strongly the local application of ten per cent. tincture of iodine to the inflamed area and for several inches beyond it in all directions for the prompt control of erysipelas. He has used this remedy, thoroly applied, in a very large number of cases and has found it far superior to any other which has been suggested. In many cases the temperature fell to normal and the constitutional symptoms began to subside within a comparatively few hours. The application must be most thoro, and where there are folds to be treated it is best to pour some of the iodine into them and spread it about with a cotton swab. In some cases a second application of tincture of iodine may be required, but in the majority one application will effectively check the progress of the disease.

Medical Treatment of Appendicitis.—Laird in a recent issue of *The Prescriber* for appen-

dititis prescribes complete rest in bed combined with rest for the digestive organs. For the first twenty-four hours as little food as possible and subsequently nutriment of the lightest and most digestible character; clearing out the intestinal tract so that no refuse matter may remain to intensify the local irritation. The writer decries the use of any of the ordinary purgative drugs which increase peristaltic action of the bowel when rest is absolutely necessary. In his opinion, magnesium sulphate (epsom salt), given in small and repeated doses, is the remedy par excellence which he combines with small doses of morphine and belladonna. This is the complete mixture:

℞ Magnesi sulphat 3i.
Liq. morph. hydrochlor.xxxiv.
Tinct. belladonnaexxxiv.
Spir. chloroformi 3i.
Syrup. zingib. 3i.
Aq. menth. pip.ad ʒviii.

M. Sig.—"One-eighth part to be taken in the same quantity of water every second or third hour." This combination to be given until the bowels act freely. As a preliminary measure, a soap and water enema to clear out the rectum. Convalescents to be very careful subsequently as to their dietary and the state of their bowels.

Treatment of Syphilis.—Reasoner in his interesting article in the Sept. issue of the *Military Surgeon* says that:

1. Syphilis should be diagnosed and treatment begun at the earliest possible moment. The dark field—or in the absence of this, staining methods—should be employed as an aid to diagnosis. The organism will not ordinarily be found for several days after the application of antiseptics, especially mercurial salts.

2. The interpretation of the Wassermann reaction is sometimes a matter of difficulty. In the absence of history or manifestations, a single positive reaction is not sufficient evidence upon which to base a diagnosis. In the presence of suspicious manifestations, one or more negative Wassermann reactions is not sufficient evidence upon which to base a diagnosis. Other procedures may be necessary to establish the diagnosis. Even with a uniform technic the reaction of an individual may be subject to unaccountable variations.

3. The greatest good will be accomplished by the administration of both salvarsan and mercury. The best results are to be expected when treatment is begun early. The administration of mercury should be pushed to the physiological limit. The soluble salts of mercury have some points of superiority over the insoluble salts. Treatment by way of the mouth does not give the best results. The results obtained from inunctions, when properly given, compare favorably with those from any other form of mercurial administration. Potassium iodide is not in itself an anti-syphilitic drug. Its greatest field of usefulness is in the presence of tertiary gummatous lesions in conjunction with anti-syphilitic drugs. Frequent ex-

aminations of the urine are desirable, as both salvarsan and mercury may exert an untoward effect upon the kidneys.

4. It is believed that syphilis is curable in a certain percentage of cases. A tentative standard has been proposed. Further investigation is desirable along these lines.

5. The results obtained from spinal fluid examinations are of great value. These examinations should be more generally practiced than is now customary.

6. The provocative Wassermann reaction is a refinement of the ordinary reaction. Information may be obtained from this reaction which can be secured in no other manner.

7. Rubber gloves are a desirable protection to the operator in handling syphilitics.

8. In positive cases, further information may

Such antiserum contains agglutinins, opsonins, and complement fixation bodies, at the same time exhibiting certain antibactericidal properties. It would seem fair to conclude, he adds, that with potent polyvalent antiserum prepared in this manner, some definite therapeutic value might be anticipated in human cases of the disease.

Vomiting of Pregnancy.—Johnson (*Amer. Jour. of Clin. Med.*, June, '17), advises painting the os uteri with tincture of iodine. One application generally is all that is required and in most instances it acts like magic. One of his patients, who had been vomiting for over six weeks and was literally worn out, was com-



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FIRST AID TO BRITISH SOLDIERS BEHIND FRONT.

often be obtained from a titration of the Wassermann reaction.

Antitoxin for Infantile Paralysis.—Nuzum in the *Jour. Amer. Med. Assoc.* (Jan. 6, 1917) describes a research conducted with a view to the production of a serum for the treatment of infantile paralysis. He finds that by the process of animal immunization with the organisms regularly isolated from the spinal fluids, and the central nervous system of human poliomyelitic patients, an antiserum can be produced. Its therapeutic limitations are as yet unknown.

pletely cured in two hours. Johnson has used this measure repeatedly, and it has done the work every time, so far, so that he never had to repeat the application.

Treatment for Chronic Appendicitis.—Tommasello discussing this topic in the *National Eclectic Med. Association Quarterly* (Mar., '17) offers the opinion that an early diagnosis with an early treatment would save all the acute cases which become chronic.

An acute gastritis, not treated at the early

stage, will give a chronic gastritis or gastrop-tosis as a complication. Acute appendicitis, treated properly, does not need to be operated on much of the time.

When we find a severe gastritis, do we use gastrotomy? Certainly not. And then, why not exercise an appropriate treatment to save the appendix in the same way we do to save the stomach?

Here is the author's treatment: When the appendix shows only hardness and congestion, my treatment can be successfully applied, which consists of a colon injection to reach the cecum, every twenty-four hours, of the following solution: Ichthyol, xx drops; glycerine, dr. vi; tincture belladonna, x drops; aqua camphor, ad. oz. iii; to be injected all at once.

The solution is for an adult, children in proportion. This aforesaid treatment shall be used for one week from the beginning of the attack, once a day, and associated by the internal use of the following powders: Benz-naphthol, dr. ss; magnesia oxide, heavy dr. i; asafetida, gr. x; aromatic powder, gr. xv; make 10 charts. One every four hours, five a day in wafers. Diet to be strictly of spring water and milk. After one week a soft diet can be used, and continuing the powders for fifteen more days, with saline solution, one pint a day, for colon irrigation.

When my treatment is given in time we can save nearly all patients from the knife; but when we find a very large distention of the organ, a danger of perforation, or an abscess formed, then the best thing to do is to take the appendix out immediately to save the patient discomfort, time, money and danger of life.

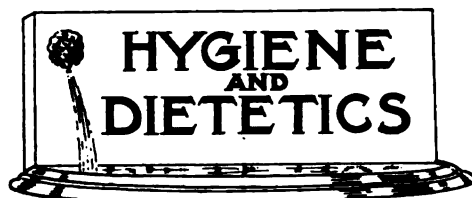
We kill many and many people without knowing it, as we advise our patients suffering from acute appendicitis to use the ice-bag and sedatives, and, after the pain has been subdued, we say the patient is cured. But alas, we should tell the poor unfortunate that he is not cured at all, only relieved from the pain from which he was suffering, and to be really cured he should use a long treatment.

Tommasello has come to the conclusion that so far as he has learned from his practice, 90 per cent. of the cases of acute or chronic appendicitis come from school children, college students, shop workers and from all other classes doing indoor work, dissipation and meat eaters.

Tommasello found with certainty that the causes of appendicitis are as follows:—

1. School frequenters are refused the time by their teachers to go to the toilet when the desire to evacuate appears, and, not passing the fecal matters at the time of the stimulus, the feces become hardened and atonia sets up.
2. Shop girls or other indoor workers abstain from evacuations for fear of losing their positions or a desire to finish the work they have in hand.
3. Dissipating people comprise another category of patients, as they do not masticate their meals and take them at irregular hours, being occupied with women, cards, dances, etc.
4. The last category is given up to the meat

eaters, for by eating much meat chronic toxemia of the digestive tract easily takes place, and gastroenterocolitis will be the result.



Increased Cost of Food a Handicap to Health.—The monthly bulletin of the Health Department of the City of Boston calls attention to the fact that while the high cost of living has been a serious handicap to most people, in general it is the poor that suffer most from the prohibitive prices that prevail. It sounds well to say "cut out" all luxuries from your table, but the table of the poor man never contained luxuries. The poor have been accustomed to eating beans, stews, fruits, vegetables, bread, milk, butter, eggs, fish, etc., all of which contain proper food values. These articles of food have now become luxuries if prices are to be considered. The proportionate increase in these edibles has been greater than in the ordinary high priced food. Carbohydrates, proteins, and fats we all know are essential for the proper nourishment of the body, but to administer them in tabloid form to the average man instead of meals would be repulsive to him. As a matter of fact, a balanced ration in regular form is preferred and bulky foods, altho some are of but little importance in food value, are necessary.

In consequence of high prices there is bound to be a lack of proper food for people, from a health standpoint, particularly, mothers, infants, and invalids. Everything possible is being done to reduce infant mortality, but prohibitive prices will give us a serious setback in such a campaign. Increased cost of food will in no wise help, and while the young and strong go to war, many to be killed, there are many others that will suffer in their peaceful pursuits at home because of conditions that prevail.

The Use of Onions.—Onions, says a writer in the *Med. Summary* (June, 1917) are being supplied raw to the troops in France, for the scientific world is coming to recognize in the lowly onion a thing of great food value, and that in it are found some of the most valuable and tonic mineral salts in the vegetable kingdom. Onions are perhaps best known as a cure for insomnia. They also oppose the rather non-descript condition known as rheumatism. Except in cases of idiosyncrasy, onions are easily digested, nourish, stimulate the appetite, soothe

the nerves and act as a mild diuretic. They contain sulphur and other elements which act as intestinal antiseptics.

Without especial rhyme or reason, people have always been inclined to eat onions with a view to breaking up a cold. Cooked onions are both sedative and laxative and would naturally be indicated in colds. And perhaps nothing in the voluminous pharmacopeia will relieve acute bronchitis and dyspnea so quickly as the old-fashioned onion poultice.

It is no doubt the offensiveness of the breath after eating them which makes most people shy of the nutritive onion. By chewing a coffee bean, however, or drinking milk after a meal of onions, this pungent aroma can be removed.

Since it has been shown that diabetic coma is caused by ketone bodies destroying the alkalinity of the blood, the rational treatment would consist of supplying the blood with alkalis in an effort to correct the acidosis. Soda bicarbonate by the stomach, supplemented by rectal medication by the Murphy drop method, and intravenous injections are to be employed. Sterilized normal salt solution will aid materially in eliminating the poison by stimulating diuresis.

A diet of vegetables containing 5 per cent. carbohydrates is allowed. They emphasize the importance of boiling the vegetables three times with change of water. This will reduce the carbohydrates. Butter may be given with the



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THE BRITISH ADVANCE IN THE WEST.

A wounded German receiving medical attention.

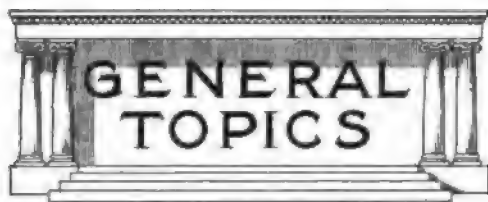
Diabetes.—Crain writes in the *Medical Herald* (July, '17) that the treatment of diabetes is principally dietary. There is no disease known to man where the regulation of the diet is of such tremendous importance as in diabetes. Medicinal treatment accomplishes little or nothing, except in its application for relief of complications and distressing symptoms. At one time opium was considered as having a favorable influence in regulating the output of sugar. Codeine is the preparation most usually employed. It is questionable whether opium possesses any real merit along this line.

Dermatitis and skin complications usually disappear with proper dieting. Diabetic gangrene should be treated surgically.

vegetables. Carbohydrate intake should be raised gradually. Proteins should also be gradually raised, alternating with the carbohydrates, keeping within the limits of sugar non-production.

The degree of tolerance of sugar-producing diet will gradually raise until the patient is able to take a sufficient amount to maintain a normal state of health. They emphasize the importance of taking exercise during this treatment.

It is all important that a patient cured of diabetes mellitus should thoroly understand the importance of frequently consulting his physician, and submitting to an examination to ascertain whether the old trouble is returning.



Important Medical Matters of Today.—Semple in his paper on Medical Matters of Today, (*Northwest Medicine*, July, 1917) says: A year ago the eastern hemisphere was engaged in the most terrific war in history and since then, after long submission to repeated deeds of barbarism and insult, the western hemisphere has been drawn into it. The call to the colors has been sounded and every profession, occupation and trade has responded with enthusiasm, and none with more spirit and self-sacrifice than the medical profession. Nor did our profession wait for our country's call, for years before a cry of distress was heard from the bloodstained fields of Europe and hundreds of American physicians crossed the ocean to render help. Of our profession supreme duties are expected, yea demanded, for not only are the health and strength of the troops placed in our hands to get them ready for action, but in rebuilding of shattered bodies, which inevitably will come after action. Will the medical profession meet the duties required of it? If history repeats itself it will.

A Study of the Menopause.—Culbertson, in his comprehensive paper in the *Surgery, Gynecology and Obstetrics* (Dec., 1916), says that the menopause is a functional derangement on the part of the various glands of the endocrine system subsequent to the cessation of the ovarian secretion.

On this basis may be explained the psychic and somatic manifestations of the menopause.

The vasomotor disturbances represent an instability of arterial tension.

In the majority of cases this takes the form of a vacillating hypertension, both systolic and diastolic.

The diastolic pressure is not elevated proportionately to the systolic. This produces an increased pulse-pressure.

Hot flushes, sweating and other vasomotor symptoms are directly created by the vacillations in arterial tension.

In a minority of cases there is arterial hypotension, and here also the systolic and diastolic pressures are out of proportion.

Hypertension is apparently due to a relative oversufficiency on the part of the hypophysis or the adrenals.

The psychic symptoms are apparently influenced by thyroid dysfunction—in the majority of cases a hyperthyroidism, in the minority a hypothyroidism.

The administration of the missing hormone.

represented by the extract of corpora lutea from animals in early gestation, brings about a gradual restoration to normal of the blood-pressure with disappearance of the mental symptoms.

This reduction of blood-pressure by organotherapy, together with the disproportionate systolic and diastolic rise, is offered as evidence that the hypertension is a functional one and not due to organic changes.

Blood-pressure estimation is essential as a means both of measuring the degree of menopause disturbance and of controlling its therapy.

An occasional pressure reading is of little or no value. Tension must be determined at frequent intervals, preferably daily until improvement is well under way.

The significance of functional hypertension as a factor in uterine hemorrhage is obvious and will be made the subject of a subsequent report.

Hexamethylene Tetramine ("Urotroph") as a Fuel.—Frost, in a recent issue of the *Medical Record*, says there are many times when the physician needs a small, hot, sootless flame such as produced by an alcohol lamp, when he is out of reach of any such article. It is not generally known, I believe, that hexamethylene tetramine will give exactly this kind of flame when ignited. Two five-grain tablets such as are often carried in the physician's medicine case will give a clean flame of sufficient heat to boil 5 c.c. of water in a test-tube within 30 seconds, and of sufficient duration to keep it boiling for two minutes. For boiling needles or small instruments, sterilizing water for hypodermic injections, testing for albumin by the heat-and-acid method, and many other similar purposes, this "extemporaneous technic" may be found useful.

Mosquito Chasers.—The following formulas taken from *Druggists Circular* (May, 1917) are good "mosquito chasers" and harmless to persons coming in contact with them:

I.

Eucalyptol	1½ ounces.
Acetic ether	6 drams.
Cologne water	6 ounces.
Tincture of pyrethrum	7½ ounces.

Dilute with 5 to 6 parts of water.

This can be applied to the skin to prevent the attacks of the mosquitoes and also can be sprayed about the room.

II.

Oil of peppermint	2 ounces.
Oil of camphor (volatile)	2 ounces.
Glycerin	2 ounces.
Oil of tar	4 ounces.
Olive oil	4 ounces.

III.

Ammonia water	12 drams.
Glycerin	2 ounces.

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In Advance

Medico-Military Organization.—The magnitude of war operations has demonstrated the necessity for the centralization of power. Large committees and commissions have failed to achieve the results which have attended the efforts of a single man, chosen with reference to his fitness to handle vast problems.

The medical aspects of war yield in importance to no other phase of national work in times of stress and strife. Unfortunately there is no medical officer in the cabinet of the President, despite the fact that this has been urged for many years. The War College lacks a representative of the medical departments of the National Government. The various Surgeon-Generals are virtually subordinated so that their recommendations are practically advisory in character, whereas, from the standpoint of medical efficiency, they should possess mandatory powers.

It is important that the powers of medical men should at least be commensurate with their responsibilities. The recruiting and selection of men for all branches of the service, the sanitation and hygiene of concentration camps, the organization of hospitals, and dressing stations, the location and sanitation of camps and trenches are of vital significance to the health and welfare, which mean the military efficiency, of the army. The prevention of epidemics, the treatment of casualties, the maintenance

of adequate hospital care, the organization of ambulance systems and the movement of the wounded are matters of paramount interest, for which the responsibility, theoretically at least, is placed upon the medical authorities in the Government service. As a matter of fact, every recommendation dealing with any of these phases of essential military service must be passed upon and approved by non-medical men before they become effective as military orders.

The preservation of the health and strength of fighting forces on land, sea, or in the air should be regarded as a primary function of military organization. To be most satisfactorily guaranteed there should be a medical representative in the War College capable of advancing the views and opinions made necessary at every step in the determination of the course of military action.

In England there is contemplated the appointment of a medical dictator whose powers shall be no less broad than those now given to the Director of Munitions. The services of these individuals are recognized as necessary for working out constructive programs for the rehabilitation of the civil population and for guiding the policies growing out of the employment of millions of men in the science and art of war.

The decentralization of medical work and the scattering of forces and functions

among a large number of sub-committees do not form a proper nor adequate solution for the medical problems with which this country is grappling. In any large business enterprise a single individual is held responsible by the board of directors for the formulation, administration and execution of important plans. The work may be diversified and various portions of it carried on and developed by various groups of the organization but the actual harmonization and practical coordination of all proposed endeavors lie in the hands of a single individual.

The medical work of war demands efficient organization along business lines. The distribution of authority, the decentralization of function, the dissociation of responsibility and power preclude the highest grade of effective medical progress.

The medical profession recognizes the shortcomings in the present form of organization and its influence should be directed towards securing the correction of existing defects before they assume such large proportions that criticism is visited upon those who, in the public eye, are not regarded as responsible for the health and welfare of our military, naval and marine forces. In this war as in no other war the service of the medical profession must be employed with intelligence and reason, under skilled medical direction and supervision, if it is to live up to the duties and obligations which medical military exigencies place upon it. Centralization of medical authority is essential for the welfare of the army, navy and the marines.

velopment of the large aviation corps demonstrates the importance of this erstwhile sport of the rich as an effective branch of military service. It is remarkable that the aeroplane industry should have assumed such a tremendous development in modern warfare, competing with the submarine as an instrument of investigation and destruction.

In order to supply the vast flying squadron which is contemplated, the aeroplane industry of the United States is now placed under forced draft. As is natural in the expansion of an industry under the stress of emergency, overemphasis is placed upon the rapidity of construction and little thought is given to the hazards involved. Large numbers of men are to be employed under new and trying conditions, exposing them to occupational diseases, the nature of which has not been fully recognized in this country.

The hygienic dangers of the aeroplane industry have been investigated by the New York State Industrial Commission thru its Division of Industrial Hygiene of the Bureau of Inspection. It is probably fortunate that the experience in England and Germany has pointed out the liability to illness and death in factories devoted to the manufacture of these flying mechanisms of offense and defense.

The wings of an aeroplane consist of Irish linen, stretched over mahogany or spruce framework, the interstices of the cloth are made impervious to water and air thru repeated applications of a varnish which contains as its chief base either acetate or nitrate of cellulose mixed with a rapidly evaporating solvent. The mixture frequently termed "dope varnish" contains dangerous substances such as tetrachlor ethane, acetone, wood alcohol, or benzene.

"Dope" Poisoning in the Aeroplane Industry.—The demand for the rapid de-

The tetrachlor ethane is most frequently responsible for the illness among aeroplane workers which presents itself with symptoms of nausea, vomiting, abdominal pains, jaundice, delirium, and leads to possible fatality.

The "dope process" constitutes the greatest danger when quick drying of the varnish is secured in overheated rooms, lacking in adequate ventilation.

Toxic jaundice presents the following clinical features according to Dr. Willcox, *London Lancet*, March 13, 1915.

- "1. Insidious onset of symptoms.
- "2. Comparatively long duration of the acute stage when marked jaundice has supervened, thus distinguishing the cases from acute yellow atrophy of the liver.
- "3. The absence of marked pyrexia, thus distinguishing the cases from infectious jaundice (Weil's disease).
- "4. The absence of anemia, thus distinguishing the cases from poisoning by substances which cause marked blood destruction, arsenuretted hydrogen, etc.
- "5. The marked depth of the jaundice which is much deeper than is usually seen in cases of delayed chloroform poisoning."

Inasmuch as the medical profession is unfamiliar with this toxic condition it is imperative that familiarity with the symptomatology be secured but more particularly that the amelioration of causative conditions be facilitated with a view to eliminating the hazards to employees. Physicians must take warning of the possibility of industrial disease in the aeroplane industry. Employers and employees must be brought to realize the necessity of safeguarding the industry against a morbidity and a mortality in manufacture proportionately greater than that existing among the aviators soaring in clouds with the finished product.

The New York State Industrial Commission, (*Bulletin*, June, 1917), makes a series

of recommendations which command consideration. They cover advice for a downward system of ventilation, and the drying of wings, ailerons and rudders in rooms, apart from the "dope" rooms. The workers should have a fifteen minute rest period in the morning and afternoon in the open air. All "dope" workers should be provided with hot running water, soap, individual towels and overalls, as well as, well ventilated lockers. Eating in the "dope" room is to be forbidden and at least an hour is to be allowed for lunch period. Active and frequent medical supervision is imperative in order to secure early diagnosis of the poisoning and to prevent the serious after effects. All workers complaining of dizziness or sleepiness are to be removed from their employment for at least forty-eight hours.

If a flock of unfeathered eagles is essential for the success of the American forces it must be forthcoming in the quickest possible time. Haste, however, must not involve the sacrifice of the workers nor conduce to the incidental loss of health and output which must result from dope poisoning. The medical problems of war are no less important among those providing the instrumentalities than among those making use of them.

Women as War Workers.—The promptness with which advantage has been taken of the loyal offers of service by women indicates that the place of women in national life is recognized in everything save suffrage.

The entrance into industry of a large number of women to satisfy the increased demands for workers or to replace men

called upon for direct military service brings to the surface numerous problems concerning the welfare of women workers. Various memoranda have been submitted by the British Health of Munition Workers Committee which commend themselves to the thinking public. Fortunately the United States Department of Labor is publishing in condensed form numerous bulletins which should be of the utmost value to this country by giving prominence to the experiences of other countries in dealing with labor, output, efficiency and the health of employees.

The employment of women in Great Britain during the war (*Bulletin of the United States Bureau of Labor Statistics*, No. 223) has involved numerous matters concerning the health and industrial output of the workers. It has been found that the eight-hour shift yields best results commercially because "the strain of night work, indeed strain generally, is sensibly diminished, greater vigor and work are maintained thruout the shift, less time is lost by unpunctuality or illness, and there is less liability to accident." In view of this fact overtime or double shift systems of employment for women should not be permitted unless of course some peculiar exigency arises which makes necessary a complete disregard for the health of women.

A complete day of rest on Sunday and freedom in part on Saturday for rest and recreation are important factors in preventing the physical breakdown of women and in insuring a more constant output.

As might have been expected the advantages of industrial canteens, rest rooms, wash rooms and toilet facilities have been thoroly demonstrated. Such modern sanitary measures contribute to cleanliness and

good order, conserve strength and preserve the general *morale* of work shops and factories.

Medical Examinations Necessary for Women Workers.—Inasmuch as women workers are peculiarly prone to disturbances of digestion, anemia, headache, nervous exhaustion, flat foot and menstrual difficulties, it is worth bearing in mind that attention must be given to the placing of women in employments tending to accentuate such ailments or disabilities already existent. Preliminary medical examination is advisable for all workers. The importance of detecting minor derangements or incipient diseases of greater significance cannot be overemphasized. All women entering into employment under conditions to which they are totally unaccustomed are subject to strains and stresses which may severely tax their vitality. The move from domestic life to a munition factory is a sudden and severe change of occupation which is bound to result in subjection to fatigue factors which may possibly completely destroy the usefulness of women as workers.

While a physical examination at the time of employment may serve to detect inherent tendencies to disease, the proper placement of women workers in industry may safeguard them from further deterioration. It is equally important to continue observation of female employees at regular intervals in order to secure a high standard of physical health and to treat adequately the conditions which may be remedied while employment continues.

With a careful planning, many of the strains of industry may be mitigated. Lifting heavy weights, violent and sudden movements, processes difficult for women's sys-

tems can often be avoided at the expenditure of little money. The serious effects of long hours of standing upon the health of women has been recognized but inadequate effort has been made to eliminate such evils in industry.

In the present campaign for the development of national defense along industrial lines, a full measure of investigation is required to point out the shortcomings of industries that are calling and will call for the assistance of women. While commercial output is a matter of paramount interest, the sacrifice of workers is not to be condoned or tolerated. Whatever lowers the vitality of women eventually must cause deterioration of the general efficiency of the nation. If women are to become industrial assets they must be conserved and not impulsively sacrificed for the temporary advantage of an increased output, which is certain to fall below normal if the women themselves become incapacitated or physically less resistant to the undermining influences of continuous prolonged employment.

The relation of wages to the health of women workers involves the consideration of many elements conducing to the health of workers as well as to their output. The immense advantage of adequate wage returns for service is reflected thruout the literature of the day that deals with home sanitation, infectious diseases, infant mortality, the spread of tuberculosis and many other items embraced under the term public health. The problem of wages, however, is closely interwoven with the various other industrial questions above mentioned. The employment of women for national service places an obligation upon the nation to afford them opportunities of working in

sanitary factories and under conditions which, to say the least, must be protective against ill-health.

Pellagra.—Pellagra which had been endemic in Italy for over a century was suddenly revealed to exist in America in epidemic form. The gradual increase in its development during the past decade would indicate that it has secured a strong hold and may not be deemed to be endemic in certain sections of the country, particularly in the Southern States.

In 1911 the known distribution showed a few cases in Maine, Vermont, Massachusetts, Rhode Island, New York, New Jersey, Pennsylvania, Maryland, West Virginia, Kansas, Missouri, Ohio, Indiana, Iowa, Oregon, California. There was an exceedingly large occurrence of the disease in Virginia, North Carolina, South Carolina, Georgia, Alabama, Mississippi, Florida, Louisiana, Kentucky, Tennessee, Texas, Arkansas, Oklahoma. Illinois after investigation found a number of cases in the hospitals for the insane and nine cases outside such institutions. Hence in distribution the disease was sporadic in New England, the Middle Atlantic States and those on the Pacific Coast, and epidemic in the Southern States.

While pellagra was first reported in America in 1864, by Dr. John T. Gray, of Utica, New York, little attention was given to the disease until after 1890 when the number of cases apparently began to increase. It was not until 1908, however, that the medical profession was aroused to the exact status of the disease and it was identified as identical with the Italian pellagra.

During 1915 there were 2,843 deaths in the registration area from this cause. The average for the period 1901-1905 was 1,150 and for 1905-1910 was 1,276. It is undoubtedly true that the increased number of deaths reported is due to greater accuracy in diagnosis, altho this is probably insufficient to account for the general increase which must, therefore, be partially attributed to a greater prevalence in the disease.

About forty-five per cent. of the total deaths were of colored persons in the registration cities in non-registration states. For the entire registration area, however, a few more negroes died from pellagra than white, tho this must be regarded as due to the more widespread appearance of the disease in those sections of the country where the negroes are in largest number.

To point out the significance of the death-rate of pellagra, it must be appreciated that the total number of deaths from this cause during 1915 exceeded that due to any of the following diseases: scarlet fever, dysentery, tetanus, simple meningitis, cerebrospinal meningitis, epilepsy, pleurisy, gallstones, prostatic diseases, salpingitis, or embolism and thrombosis.

The mortality has been reported principally from cities rather than from rural districts. This is not an evidence of the effect of urban conditions, but obtains because of the fact that mortality figures are not available for the rural districts of non-registration states whose cities yield serviceable statistics.

It is apparent that pellagra has assumed proportions in the United States warranting thoro-going efforts to check its progress. While the etiology has not been demonstrated to the satisfaction of all inquiring

minds, it is obvious that nutrition plays an important role as a causative factor if it is not the main responsible element. Belonging to the category of deficiency diseases it becomes evident that vast economic and social changes are essential for its prophylaxis. The zeists and anti-zeists may continue to wrangle; the followers of Sambon may urge their theory of insect borne contagion; but despite the arguments and the administrative measures based upon these theories the disease has been progressing thruout the world. The value of the Italian law in 1902, inspired by Lombroso, lay in the education of the peasantry as to the dangers of tainted corn and more particularly the accentuation of the value of a more varied diet and improved conditions of living.

Defective dietaries appear to be the most responsible cause of pellagra and on this basis proper administrative measures should be worked out to counteract the nutritive deficiencies in pellagrous districts. The continuous increase of a disease classified as preventable reflects upon the enthusiasm with which an attack against it is pursued. While medication cannot be as effective as the administration of quinine for malaria or oil of chenopodium for uncinariasis, efforts to reduce the number of pellagrins can be none the less successful. The accomplishment of the reduction in the mortality and morbidity rate of pellagra is a serious obligation and must not be deferred.

War and Tuberculosis.—Tuberculosis as a disease in civil life has markedly decreased. In previous wars the main disabilities have arisen from diseases due to

defective camp sanitation, inadequate nutrition, and a lack of personal hygiene. Tuberculosis has not as a rule been a destructive element accompanying military advances.

Dr. Herman Biggs, *Survey*, May 5, 1917, calls attention to the tuberculosis problem in France as the paramount condition requiring attention. Admitting that little systematic attention was paid to tuberculosis previous to the mobilization of troops, Dr. Biggs implies that the active French army presents a tremendous case incidence of tuberculosis, while the civil population is in a discouraging state of infection. According to his figures, at a conservative estimate, there are 400,000 cases of tuberculosis requiring treatment at the present time, for which the hospitals, sanitary stations and convalescent homes are totally inadequate. His discussion would lead one to believe that the high figures of tuberculosis morbidity are largely due to the strenuous life imposed upon the troops, the lack of sanitary internment camps for French prisoners in Germany, and a general failure to bring to bear the modern facts of tuberculosis prevention thruout France.

Fishberg, in the *Journal of the American Medical Association*, June 16, 1917, points out that war itself plays comparatively little part in increasing tuberculosis in any military nation. The citation of facts and figures from England and Germany tends to substantiate his conclusion that "military service in the field is not more liable to reactivate dormant or quiescent tuberculous lesions than any other civil occupation requiring muscular exertion, walking, exposure to the vicissitudes of the weather, etc."

The statistics for tuberculosis in armies

during times of peace indicate that the relative frequency of infection is far less than among the civil population in the classes corresponding to the age of military service.

Dr. Osler pointed out that the life of the soldier tends to increase bodily resistance and that the tuberculous population is not increased thru the rallying of large percentages of the selected male population into military and naval forces.

A. M. Fauntleroy, of the United States Navy, after a careful investigation of conditions behind the allied armies in France reported that "tuberculosis of the lungs is of rather infrequent occurrence."

Inasmuch as soldiers undergo a comparatively rigid examination before acceptance and their lives are spent in the open air with every care possible given to their physical welfare, it is probable that their hardships are outweighed by the protective influences brought to bear upon their physical condition. It is not unreasonable to believe that "tuberculosis is no more liable to develop in soldiers than in the civil population."

The history of the present belligerents establishes beyond doubt that there has been no marked increase in the morbidity and mortality from tuberculosis nor indeed did such arise after the Franco-Prussian War nor after the Civil War in the United States.

In absolute numbers it is probably true that the French army is productive of many thousands of cases of tuberculosis, but this is to be expected in a fighting force numbering possibly six million men. The relative incidence, however, is no greater than that which existed among a similar group of men of the same age and number in the ante-

bellum days. The figures of Rénon demonstrate conclusively that tuberculosis has not increased among the civil population of France since the war began and it must not be forgotten that the conditions of living among the civil population are not as conducive to continuing vital resistance as those surrounding the fighting forces, despite the stresses, strains, the trench warfares, the shocks and imperilments.

The problems involved in warfare are sufficiently serious from the health standpoint without conjuring up pictures of distress and torture which are not thoroly in accord with probabilities, or indeed published and established facts.

The situation in France was wretched before the war began; it has not improved while the conflict has raged. There exists, however, no evidence to indicate that war itself has played an unusual part in the creation of national invalidity from tuberculosis.

The formation of a large conscript army in the United States involves serious sanitary and hygienic problems to insure the health and welfare of the soldiers drafted from every walk of life. The process of selection is depended upon to determine the fitness of recruits for military service. The mere fact of having been a tuberculous suspect is not sufficient reason for rejection, because as it well known, many sanatorium patients have never actually suffered from the affliction and a large proportion have completely recovered from an abortive type of the disease. The only cause of rejection to be considered are the symptoms of active disease which are capable of demonstration.

The plan suggested of making X-rays of the chests of recruits does not carry with it a sense of conviction, because of the fact

that this method is not absolutely reliable for the detection of incipient tuberculosis. Radiography is of service only when the tuberculous deposit reaches a size that makes it visible to the rays; and before this time the exudation around the focus of infection may supply the adequate clinical signs. Furthermore the best shadows that are secured arise from areas of calcification which as a rule represent a reasonable cure. Apical infections are difficult to demonstrate in incipient processes. The problems of interpretation of X-ray pictures increase their unreliability save in the hands of experts with a wide experience. As a practical question it is doubtful if there be in the United States a sufficiently large number of experts to make this method of procedure practical or useful. The plan is interesting but would tend to create a sense of false confidence while contributing very little to the elimination of tuberculous soldiers from the army.

The American people must not be led to believe that their boys are entering into a temporary career which threatens to increase their liability to tuberculosis. The horrors of war are sufficiently unpleasant without adding unnecessarily to the vision of their devitalizing effects. Tuberculosis is not essentially a disease of war. It is a plague of society, that depends for its continuance upon a vast number of social and economic factors involving insanitary conditions which exist where ever human being lives contrary to nature's laws.

Diagnostic Standards of Tuberculosis.

—The difficulties of diagnosing tuberculosis in its incipient stage are well known. The finding of the tubercle bacillus in the sputum makes positive a condition which may have been sought with diligence but

without success. The National Association for the Study and Prevention of Tuberculosis, working thru its experimental center on Community Health and Tuberculosis Demonstration, has found it necessary to establish tentatively some diagnostic standards which may prove practical in securing uniformity of methods and interpretations of findings by physicians thruout the country.

There is a moderation and conservatism in the minimum standards devised, particularly for diagnosis among children, that should appeal to those who are not prone to see tuberculosis in every symptom which can not be accounted for at first thought by some definite lesion. It is significant to find the statement "constitutional signs and symptoms of disease such as loss of weight and strength, fever, etc., are of more importance than signs and symptoms relating to the chest." It is advised that conditions such as diseased tonsils or adenoids, carious teeth, improper feeding and rickets should be sought for before attributing the constitutional symptoms to tuberculosis.

It is exceedingly important to recognize that extensive signs in the lungs may exist simulating tuberculosis on the one hand, while active tuberculosis may be present without any discoverable pulmonary signs or symptoms.

The Von Pirquet skin test after three negative trials rules out tuberculosis in children except during or after an attack of measles or in the presence of advanced tuberculous disease. The tuberculin test becomes decreasingly less significant in the years from five to fourteen. Definite diagnosis of tuberculosis is not justified by an X-ray examination alone, tho of course as confirmatory evidence it may be valuable.

From the standpoint of tuberculosis it is advisable to make a provisional diagnosis of tuberculosis when there is doubt as to its existence in order that the child may have the benefit of prolonged observation and hygienic treatment.

The occurrence of tuberculosis in children is of paramount importance from the standpoint of making rational provision for the protection of communities. To those who believe that tuberculosis in adults is essentially the result of infection during childhood it must appear reasonable to increase the amount of care and time given to the investigation of tuberculous infections under the age of fourteen. By greater activity and more consecutive treatment during infancy and childhood it may be possible to decrease the tuberculosis morbidity and mortality during the period of greatest economic usefulness.

Standards of diagnosis must necessarily be temporary in character until tested out thru years of experience. It is a step in advance, however, to have diagnostic standards devised under the auspices of scientific, sane and conservative experts who recognize the seriousness of tuberculosis but are not tempted to exaggerate signs or symptoms to establish a diagnosis. It minimizes the dangers of confusing this disease with others far less hazardous to the human race. Correct diagnosis can be obtained only by the application of common sense to the consideration of a large varieties of signs and symptoms, local and constitutional which may appear at any time during life.

It is to be hoped that the reports upon these novel recommendations will prove their value or demonstrate their weakness; in either instance contributing to the de-

velopment of real scientific progress in the control of tuberculosis.

Instruction in Hygiene.—The development of public health and sanitation finds sympathetic approval in all quarters. The laity has been impressed with the necessity of securing a large corps of physicians trained and experienced in modern preventive public health work. It is surprising that the medical schools of this country have been backward in recognizing the importance of public health instruction as a subject to be stressed in the curriculum. According to Dr. M. J. Rosenau (*Journal of American Medical Association*, June 2, 1917), there are only four or five medical schools that now treat hygiene as a major subject, that is, organized on the basis of a well equipped department with a full-time staff, with adequate facilities for teaching and investigation, with a reasonable allotment of time and a required course in which credit is essential before the degree M. D. can be obtained.

It is admitted that the purpose of medical schools has been to train men in the methods of ministering to the sick. To this function must be added the training of medical students in the methods of conserving health. Unless our medical colleges assume this function the training of health officers will become established in schools other than those devoted to medicine and the field of public health will be disassociated from medical practice.

Diagnostics and therapeutics are involved in preventive medicine as much as in the conventional type of personal practice which devotes itself to the restoration of individuals after the attack of disease.

The relief of suffering humanity may more wisely be secured thru the prevention of contagious and communicable diseases and the postponement of diseases of degeneration, than by calmly deferring medical assistance until illness exists. Up to the present time health has not been regarded as a tangible asset, while sickness has possessed an actuality for the removal of which men are willing to pay.

It is true that public health is virtually the aggregate health of individuals. The obligations of physicians to conserve intelligently the personal health of their patients merely reflects a portion of their duty to the general public. The relation of the physician to public health merits greater consideration today than ever before in the light of our present knowledge of the interaction between personal welfare and the common weal.

Dr. Rosenau points out that young graduates in medicine are constantly questioned concerning matters of diet, exercise, clothing, rest, ventilation, heredity, and eugenics. Their opinions are sought in respect to public policies bearing on child welfare, medical inspection of schools, industrial hygiene, vital statistics and health administration. To enable them to answer intelligently it is essential that they be given the proper educational background during collegiate days. Medical schools should provide an opportunity and require a training in the principles of sanitary science, and the science and art of preventive medicine. There is no reason why a medical school should not liberalize its subject matters so as to impart a working knowledge of the sociology and economics underlying a considerable amount of illness. Certainly discussions on occupational disease, the effects of night work and fatigue, the rela-

tion of wages to health, the problems of germ carriers, water supplies, food protection and countless other obvious topics are within the province of medical science.

It is not necessary that medical colleges should attempt to make public health officers out of students, but a wider service can be performed for the general public by stressing the various ways in which the private physician may cooperate with and facilitate the work of health departments.

In the distribution of time allotments to various subjects, consideration should be given to the advantage to be derived not merely by the student but by the public which he is to serve. There is a considerable wastage of time as the curriculums are arranged at present. There would be no loss in the usefulness of the average medical graduate if a part of the time devoted to the training in certain of the specialties was curtailed, and the hours thus saved were given to the constructive phases of hygiene. The general tendency towards hospital training makes it possible for the student to secure ample experience along technical lines, which will more than make amends for any limitations upon these subjects imposed by a redistribution of the time allotment for instruction during the course of the student's career. The position of the physician is becoming transformed, the idea of the private physician is yielding to the concept of a public physician. The two terms are not interchangeable altho the public physician idea includes that of the private physician. He who serves his private patients wisely and well contributes a moiety to the communal welfare. In thus serving the public he confers benefits upon the patients of all physicians and adds to the sum total of

human health, comfort and happiness.

Teaching Hygiene Successfully.—Lectures, demonstrations, quizzes and laboratory work are necessary for the successful teaching of hygiene. As in the past the structure, functions and pathology of individuals have received thoro consideration so it becomes necessary to study similarly the structure, function and pathology of the communal organism. Disease of the individual is for the most part an evidence of civic disability or disease. As long as the individual is regarded as an isolated unit, the problems bound up in the maintenance of communal health can not be solved. The medical students of the future will be weak and inefficient from the standpoint of preventive medicine unless they are trained to recognize their larger duties and responsibilities as communal health agents, as teachers and prophylacticians.

The responsibility for bringing about the transformation of medical teaching and for making the ideas and ideals of public health an essential part of the nature of physicians rests upon medical colleges. The vision should be found at the places devoted to medical instruction. The impetus of war will undoubtedly stimulate many colleges to introduce courses of study designed to prepare students for military service. The place which sanitation and hygiene occupy in such a course demonstrates conclusively that the army demands men trained in the art of preventive medicine as well as in curative technic. Possibly there will remain a wider recognition of the fact that hygiene is a requisite for the great civil army which in time of peace or war is fighting manfully for the progress of the human race and for the maintenance of health and happiness.

Poverty and Physicians.—The growing interest of medical men in matters of sociologic and economic importance is commendable. It represents the foundation of a larger medicine which sees human beings suffering from the interaction of large forces beyond individual control.

The scientific training of medical men must be carried over into their new studies and the basis of facts must serve as the starting point for their opinions and policies. As an illustration of the difficulties which necessarily result from a failure to build upon accuracy one may point to an article in the *Medical Economist*, July, 1917, on *Poverty and the Physician*. Two definitions and an italicized conclusion serve as the basis of an argument.

"*Pauperism* is that condition in which the individual has no means of support and no hope of such means."

"*Poverty* is that condition in which the individual is living beyond his means but has hope that his income will increase."

"*No matter what a man's income is, if he lives beyond his means he is in poverty.*"

The writer then goes on to state: "Not excepting the college professor, the school teacher and the minister of religion no stratum of society estimated professionally has a larger proportion of men in poverty than those composing the medical profession."

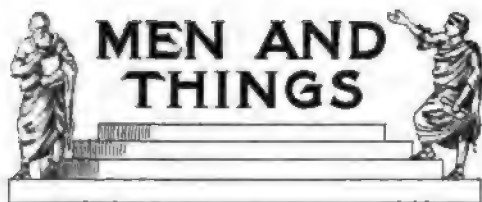
The definitions and the conclusion are hardly in accord with accepted standards and invalidate every argument which is based upon the acceptance of such premises. Pauperism is such destitution as throws one upon organized public charity for support. Poverty is a state of being poor, without property or any means of support; a condition below that of your comfortable

living. Destitution is a lack of the comforts of life and in part the necessities of life.

It is obvious that upon these lexicographic interpretations the medical profession possesses few paupers, poverty stricken individuals or destitute workers. The physician who lives beyond his means lacks in judgment, discretion and wisdom. He may be poor in his mental equipment and rich in his financial resources.

A still more unfortunate phase of the discussion as to the poverty of the physician arises from the fact that in the introductory paragraph discussing poverty, the writer comments "A small proportion of it (poverty) is due to untoward financial changes, family emergencies and to sickness * * * the enormous proportion of it is due to pride, sloth, thriftlessness, extravagance in dress, food, wines, entertainment, the playing up of unhealthy ambitions." It is most desirable that physicians should strive after more comfortable competences for the profession. But if the "poverty" of physicians is due to the various causes above enumerated, attention should first be directed to a reeducation of the doctors so as to secure an elimination of the unhealthy factors productive of the alleged "poverty." These are factors which cannot be reformed thru processes of law or social legislation.

Physicians may not have the incomes which their service to humanity warrants; the average pecuniary return may be lamentably small in proportion to effort and accomplishment; but the profession is suffering but little from poverty and still less from "pride, sloth, thriftlessness, extravagance, and the playing up of unhealthy ambitions."



The Effects of Alcohol.—The views of the medical profession in all parts of the world have greatly changed within recent years with respect to the value of alcohol. Not many years ago the use of alcohol was advocated in a general way and it was largely prescribed by medical practitioners. Now the pendulum has swung far in the other direction and a goodly number of medical men deny that alcohol possesses any virtues whatsoever.

There can be no doubt that beverages containing any considerable amount of alcohol, except when used in the strictest moderation, are harmful. It is obvious to the least discerning that the abuse of such beverages brings about disastrous consequences. It must be fully admitted that drinking to excess is often responsible for our worst mental, moral and physical ills. Directly and indirectly alcohol is the main factor in the causation of many of the most serious diseases, and if not employed with discretion is one of the most potent forces for evil that civilization has to contend with. These are incontrovertible facts. In short, there is no need to elaborate the argument that unless the use of alcohol is kept well within bounds its harmfulness is sure to be great. However, the abuse of alcohol and its rational use are very different matters. The absolute uselessness of alcohol has not been proven. The extent of its utility is, therefore, largely a matter of individual opinion.

The Action of the House of Delegates of the A. M. A. on Alcohol.—The House of Delegates at the last meeting of the American Medical Association passed the following resolution: "Whereas, the belief is growing that the use of alcohol as a beverage is detrimental to the human economy, and whereas, its use in therapeutics as a tonic or a stimulant or as a food has no scientific basis, therefore, be it resolved, that the American Medical Association opposes

the use of alcohol as a beverage, and be it further resolved, that the use of alcohol as a therapeutic agent should be discouraged."

As Dr. Amory Hare has pointed out in an especially pertinent letter published in the *Journal of the American Medical Association*, (July 21, 1917), "the above sweeping resolution was preferred to the safe and sane resolution offered by the Section on Pharmacology and Therapeutics to the effect that it was the sense of the Section that since the question of the therapeutic value of alcohol has been long in dispute, and still remains undetermined, any hasty action taken in the stress of the present circumstances would not be wise, and would not reflect fully the best therapeutic and pharmacologic opinions. Furthermore, while recognizing the possible need of prohibition of the use of alcohol, as a measure of public safety, it would ask that the two questions be considered separately on their respective merits."

The question of prohibition and of the social affairs therein involved may very properly be considered by the House of Delegates, but it certainly does not come within its province to assume to itself the right to issue dogmatic resolutions, based on the views of only a part of the members of the Association, but which claim to represent the opinions of all. The framers of this resolution must have been well aware that many Association members were not in accord with the terms of the resolution. Therefore, they arrogated to themselves authority which they did not really possess, and endeavored to strangle or stifle free thought among those who differed from them or had an open mind on the subject.

Despite the assertions set forth in the resolution, the question of the value of alcohol from the therapeutic standpoint has not been settled definitely. The *Lancet*, November 4, 1916, states in an editorial: "There is little doubt in the minds of hospital staffs and committees about the value of alcohol as a drug; it has its place, but in the past it was overestimated." Regarded from the point of view of drug value, it may be said that alcohol is found today to have much more restricted application than formerly. It is known now that the value of alcohol has been greatly overestimated, but it certainly has not been shown that it possesses no therapeutic value whatever. On

the contrary, some of the greatest medical authorities ascribe very substantial therapeutic virtues to alcohol, while others, wise in their generation, will not run the risk of stultifying themselves by advancing and spreading broadcast opinions, which later they may have to revise very considerably.

Authoritative Views with Regard to Alcohol.—There is no space here to recapitulate, at any length, scientific opinions as to the value of alcohol as a drug. A few such opinions, however, may be cited. William D. White, in the Third Edition of the *Reference Handbook of the Medical Sciences*, says: "Its uses as a digestant are undoubtedly its most important ones, if we regard the frequency of employment." The same author further says, that "its next most important use is as a food."

Horatio C. Wood, Jr., in the Fourteenth Edition of his well known *Therapeutics, Its Principles and Practice*, says: "Alcohol in its destruction yields kinetic energy which is employed by the organism for its purposes so that alcohol is capable to a considerable extent of replacing the diocarbons of ordinary food, and must be considered to have definite food value."

Cushny of London goes further, for when considering the food value of alcohol he says: "The final result of all these investigations is that alcohol can take the place of some of the fats in the food and leads to the same economy of protein as the ordinary non-nitrogenous." More than one authority refers to the value of alcohol as a quickly acting stimulant in the various forms of sudden circulatory collapse and to its vasodilator effect in angina pectoris.

Dr. Abraham Jacobi, in this journal (September, 1913), highly lauded the value of alcohol in cases of profound sepsis.

Dr. A. Hare sums up the matter as follows:

"1. Alcohol is a powerful drug, and therefore, if used carefully, capable of doing good. 2. Thousands of physicians prescribe it in illness. 3. Great care should be exercised by a body of men acting as representatives of their colleagues in condemning dogmatically what many of their colleagues believe correct. 4. Such action may jeopardize the reputation of a professional brother."

To these expressions of opinion, we

heartily subscribe. It was uncalled for arrogance on the part of the House of Delegates to unreservedly state that alcohol was altogether pernicious and its use to be deprecated. The resolution passed by them does not fully represent the views of a very large number of the members of the Association, inasmuch as it is common knowledge that the therapeutic value of alcohol has not been scientifically disproven. The passing of the resolution was especially ill-advised in view of the fact that the Section on Pharmacology and Therapeutics was against it, the Section being the one most competent to speak with authority on the matter.

Therapeutics based on resolutions passed by a body of men who do not represent the opinions of many thousands of members of the Association, cannot count for much.

Once again it may be reiterated that while the value of alcohol from the therapeutic aspect has been exaggerated, its absolute uselessness has not as yet been demonstrated. To state that such has been the case is to state that which is not in accord with the facts.

Physicians and War Service.—We have been asked to urge our readers to come forward and offer themselves to the country for medico-military service. A considerable number of our esteemed contemporaries have printed application blanks for the Medical Reserve Corps and published earnest appeals to medical men to volunteer at once and save the profession from the ignominy of conscription. Without intending the slightest criticism of our contemporaries, and heartily commending them for their zeal and wholesome patriotism, we wish to go on record as reiterating the views we have expressed from the beginning, that there is no occasion for fearing that American medical men will be recreant in their duty to the country. If our medical press has helped to create the unfortunate impression that American physicians were failing to respond to the call for medical men and were seemingly indifferent to the needs of the nation, the fault lies in the premature and hasty statements made by those who were engaged in organizing the Medical Reserve Corps. It is not our desire to be understood as questioning the good faith of those

who have been responsible for the general belief that physicians thruout the United States were not coming forward as they should in response to the nation's call. The most they can be accused of is hasty conclusions and mistaken conception of the spirit and intention of American medical men.

Physicians Have Enlisted Slowly.—This is doubtless a fact, but it has never justified the conclusion that the doctors of the land would fail to meet the military needs of the country or prove so indifferent to the nation's call that the Government would have to resort to conscription to raise the quota of doctors required for the new National Army. This was a wicked idea to allow to go forth, and the profession in consequence has been subjected to a degree of criticism and condemnation that has been entirely uncalled for. The situation as it actually exists shows how ill founded have been the fears of those who have unintentionally, but none the less unfortunately, led the American people to believe that their doctors were "slackers"—or worse. According to the *Journal of the American Medical Association* (Aug. 11, 1917):

"On August 4 approximately 16,000 physicians had offered their services and had made application for commission in the Medical Reserve Corps. Of this number, nearly 14,000 had been recommended for commission. Some of the remaining 2,000 applications were pending; others had been rejected for cause. Of the 14,000 commissions recommended, nearly 9,000 had been accepted. This leaves about 5,000 applications which may be accounted for as follows: 1,300 were pending in the Adjutant-General's Office; an uncertain number had been sent out too recently to allow for the acceptance to be returned; some who had received commissions were delaying—for various causes—in sending in the acceptances. What proportion of this group will finally accept their commissions is problematical; but based on information which we believe to be reliable, we confidently assert that there are at the present time at least 13,000—probably 14,000 is nearer the correct number—physicians ready when called on for active service. These figures do not include physicians who have entered the regular Medical Corps during the last few months, or those connected with the National Guard, the latter at least 1,000 in number. Moreover, from 100 to 150 new applications are reaching the Surgeon General's Office daily."

As the *Journal* well says, to advocate drafting medical men under the foregoing

circumstances is an insinuation against the profession that should be indignantly resented.

When the conditions surrounding the practice of medicine are considered, together with the sense of obligation which every medical man feels toward his work in his community, there will be few who will deny that the medical profession has responded as loyally as any other class.

We can only repeat the opinion we have repeatedly expressed that American medical men will bear their full share of the nation's burden, and as their services are needed they will come forward in ample numbers to prove their devotion to humanity and their country.

Soda Water Sanitation.—Various sections of the country may boast of their local beverages but ice cream soda water bears the palm and laurel as the all American summer drink.

Regardless of the incidental questions involved in the dietetics of ice cream soda water it is strange that so little attention has been devoted to the hygiene of the subject.

All too frequently the ice cream exists in name only and represents concoctions free from cream but abounding in materials iced to prevent their complete loss. The bacterial content is large and depends principally upon the degree of purity of the ingredients entering into the frozen product. Bacteriologic standards are lacking and in consequence there is little protection for the general consuming public, altho its dangers are by no means lessened thru the freezing process if the various elements of the ice cream were previously contaminated.

The adulteration of soda waters with pernicious coloring matters has been recognized as illegal, but the dispensers of cheap drinks are not deterred from utilizing anilin products if they believe they can escape detection.

The soda water fountain that is exceedingly popular fails in its hygienic obligations in the matter of cleanliness in the care of glasses. A few minutes in attendance will demonstrate to the superficial observer that glass washing as practiced is thoroly unsatisfactory and fails to protect the drinker from possible contamination by

the effluvia left upon the rim by the hands, lips and tongue of the previous user of the glass.

Plunging a glass into a trough of unclean, probably cool water, does not suffice to remove the bacteria and epithelia which unwittingly have been deposited thereon by the enthusiastic, thirsty soda fiend. Were similar carelessness in evidence in saloons it would be pointed to as another evidence of the foulness and corruption of alcohol dispensers.

The sanitation of soda fountains is not merely an academic question nor indeed is it one entirely restricted to the realm of esthetics. It is a practical problem in hygiene that deals with a food in popular demand and which merits as great consideration as any other food available for the general public. Adulteration, uncleanness and potential bacterial infection can be eliminated if their importance is demonstrated and the soda consuming public demands it.

At the present price paid for ice cream soda water the profits are large and would permit the employment of individual paper containers as a substitute for the generally utilized glass without robbing the soda merchant of an appreciable percentage of his reward. The common drinking cup has been the subject of attack for many years and is rapidly disappearing from public places. It is the time that similar efforts at control were directed towards securing the individual drinking cup for ice cream parlors.

The Gregarious and Ubiquitous Fly.—

In spite of the campaign that has been so ruthlessly prosecuted against the fly during the past few years, there is a greater number of his breed this season than ever before. From every side the story is the same—"Driven almost crazy by the flies." It is evident we must double—quadruple—our efforts toward the annihilation of this detestable pest. Formaldehyde and sodium salicylate are the two best fly poisons, according to the unequivocal statement made by the Department of Agriculture in a recent *Bulletin*. Both are superior to arsenic. They have their advantages for household use. They are not a poison to children, they are convenient to handle, their dilutions are

simple, and they attract the flies.

A formaldehyde solution of approximately the correct strength may be made by adding 3 teaspoonfuls of the commercial formaldehyde solution to a pint of water. Similarly, the proper concentration of sodium salicylate may be obtained by dissolving 3 teaspoonfuls of the pure chemical (a powder) to a pint of water.

An ordinary, thin-walled drinking glass is filled or partially filled with the solution. A saucer, or small plate, in which is placed a piece of white blotting-paper cut the size of the dish, is put bottom up over the glass. The whole is then quickly inverted, a match placed under the edge of the glass, and the container is ready for use. As the solution dries out of the saucer and the liquid seal at the edge of the glass is broken more liquid flows into the lower receptacle. Thus the paper is always kept moist.

Any odor pleasing to man is offensive to the fly, and *vice versa*, and will drive them away.

Take five cents' worth of oil of lavender, mix it with the same quantity of water, put it in a common glass atomizer, and spray it around the room where flies are. In the dining-room spray it lavishly even on the table linen. The odor is very disagreeable to flies and refreshing to most people.

Geranium, mignonette, heliotrope and white clover are offensive to flies. They especially dislike the odor of honeysuckle and hop blossoms.

According to a French scientist flies have intense hatred for the color blue. Rooms decorated in blue will help to keep out the flies.

Mix together one tablespoonful of cream, one of ground black pepper, and one of brown sugar. This mixture is poisonous to flies. Put in a saucer, darken the room except one window, and in that set the saucer.

To clear the house of flies, burn pyrethrum powder. This stupefies the flies, but they must be swept up and burned. It has been proven beyond all question that flies are carriers of disease and a constant source of danger to human beings. If there is any good that can be said for the fly, except that he is a faithful supporter of the Rooseveltian doctrine in favor of large families, no one has said it, so far as we know he is friendless. Z'death!



LIQUID PETROLATUM IN THE TREATMENT OF GASTRIC AFFECTIONS.

BY

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I found in a rather accidental manner that liquid petrolatum may be utilized for exactly the same purposes as olive oil in the symptomatic relief of various diseases and disorders of the stomach. Patients, affected with certain gastric ailments, suffering at the same time from intestinal stasis, who were in the habit of taking liquid petrolatum for this condition, in many instances, cease to complain of concomitant stomach disturbances. This fact was voluntarily communicated by many of these patients and was made use of by me for clinico-therapeutic investigation.

Among the affections which are especially symptomatically amenable to the administration of liquid petrolatum are hyperchlorhydria, excessive acidity due to organic acids, pylorospasm and gastroduodenal ulcer.

It is true that, unlike the vegetable oils, liquid petrolatum is not absorbed at all and possesses no nutritive value. But the vegetable oils in the treatment of gastric diseases are not administered primarily on account of

the nutritive benefit which they may eventually yield, but on account of their property of allaying gastric distress. This apparent disadvantage, however, is more than counterbalanced by the non-ability of liquid petrolatum to ferment. The administration therefore of the mineral oil precludes the production of cleavage products of an acid nature.

In administering the vegetable oils, the remedy may, in certain conditions, cause greater distress than that which it seeks to combat. The possible setting free of a number of fatty acids of low melting point may give rise to irritation and other undue symptoms which are far greater than the original discomfort. It is a well known fact that the exhibition of the vegetable oils in affections of the stomach gives but temporary relief. In many instances this relief lasts but fifteen or twenty minutes and it seems that the ingestion of many other articles of food, liquid or solid, may accomplish the same end.

It is probable that the mineral oil acts in the upper gastric tract much in the same manner as it does in the colon, that is, mechanically by lubricating the walls of the stomach and duodenum. Vegetable oils, injected into the rectum, of course, also lubricate the walls of those segments of the intestine with which they come in contact, but the main laxative action of oils injected

in this way, is the result of the irritation and consequent increased peristalsis due to low fatty acid cleavage products. The dose of the liquid petrolatum in the amelioration of gastric disturbances should be a rather large one. Two or three tablespoonfuls should be administered as a rule; according to the case it should be given either before or after meals and, if necessary, at bedtime.

General Hyperacidity and Hyperchlorhydria.—When the increased gastric acidity is due to these secretory disturbances it is best to prescribe the mineral oil to be taken from fifteen to thirty minutes after meals. The results in such cases will be found to be almost universally good. If, on the other hand, the acidity is due to gastric atony and hyperfermentation, when, in other words, the acidity is caused by organic acids, the logical time of administering the mineral oil appears to be about twenty or thirty minutes before meals. There are cases of the latter type of acidity in which it is best to exhibit a tablespoonful of the oil before as well as after taking food.

Pylorospasm.—Since we know many of the factors giving rise to pylorospasm and their treatment, the clinician is much less frequently confronted with this symptom than formerly. A woman under my observation, who persisted in continuing her high mode of living, whose "magenkrämpfe" could hardly be relieved by either morphine or atropine surprised me with the statement that since she was taking mineral oil for her constipation the attacks had ceased or almost ceased. In pylorospasm and probably also in cardiospasm, it seems to me that the affected parts should be bathed in the mineral oil for as long a period as possible. In these cases I found the most practical benefit by administering the

oil in very small and very frequent doses on the critical days.

Gastroduodenal Ulcer.—In ulcer of the stomach or duodenum the mineral oil should be given in broken doses before, during and after meals. It is in these cases, as a matter of fact, in which the limit of the doses is dictated by the laxative effect. Rest, of course, is paramount when there is an active ulcerative process, and the diet must be as little irritating and as small in amount as possible.

In all these and similar gastric affections it appears that the mineral oil is able to replace the alkali treatment in protracted cases. Its emollient features serve as a welcome change and are in most instances gratefully received by the patient.

CLINICAL LECTURE ON TWO CASES WHICH WERE MISTAKEN FOR TUBERCULOSIS.

BY

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The following two cases are of interest, especially from the standpoint of diagnosis since both might readily be confused with, and taken for tuberculosis. Both cases were sent to me as cases of tuberculosis. They were admitted unfortunately during the vacation and died within a few days, so that it has not been possible for me to discuss with you the patients' condition during life. Both were in a grave condition when they reached the ward and went rapidly downhill after admission. In the circumstances, I must be content with showing you some of

the relics from the autopsy—the testamentary remains.

Case I.—Pelvic Sarcoma in Child of 6.—

The first case is that of a young boy who was sent to me with the diagnosis of abdominal tuberculosis. The possibility of confusion is, therefore, not imaginary.

History.—H. D., aged 6, was admitted to my ward on 12th December, 1916, with a history of diarrhea, which was stated to have lasted for three months. According to his mother's statement—which the sequel showed to be rather misleading—the illness commenced suddenly after a severe fright out of doors. On returning home he began to vomit and subsequently diarrhea supervened. The vomiting soon ceased but the diarrhea persisted till the date of admission to the infirmary. The calls to stool were frequent. The mother was not clear as to the nature of the stools till about a fortnight prior to his admission. From that date onwards the semi-fluid stool was found associated with mucus and blood.

Pain was not a conspicuous feature. The mother reports that during the first week or so of the illness, abdominal pain was present from time to time. Latterly this had not been troublesome.

The appetite thruout remained quite good. Neither the patient nor his mother seems to have been discriminating as to the intake.

Notwithstanding the good appetite and abundant supplies, his weight gradually fell off.

Previous Illnesses.—Apart from the usual febrile affections of childhood, there is little of importance to note. It is perhaps worthy of remark that, before the diarrhea began, the mother says he was troubled with worms. This may possibly have been a misinterpretation of commencing rectal irritation.

The home conditions were comfortable both as regards housing and feeding. If error existed, it was in the direction of oversupply.

State on Examination—shortly after admission to the Ward.—The boy was manifestly ill. Of normal development, he was pale and much wasted—with marked loss of adipose and muscular tissue. The large distended abdomen was a striking feature in contrast to the thin chest. There was no

edema of face, ankles or legs. But—a point of some importance—there was localized edema of the scrotum.

Alimentary System.—The appetite was pretty good. It was difficult to prevent irregular supplies of a fancy sort reaching him. The tongue was moist and clean enough. Teeth were generally bad. The tonsils were enlarged.

The abdomen was large and uniformly distended. The umbilicus was not projecting. No marked distension of veins on the surface. The skin was thin and wizzened. Subcutaneous fat practically gone. Movements of abdomen universally restricted.

Palpation revealed general resistance of the abdomen. The hypogastric area presented increased resistance. Here and there tenderness was elicited especially in the lower part of the abdomen. Superficial (femoral) glands were enlarged.

Percussion elicited, for the most part, tympanites. The bowel seemed generally distended. Fluctuation could not be made out. The liver and spleen were not enlarged, nor was dullness determined (on admission) over the hypogastric region.

The feces were usually pale in color and irregular in consistence. At one time a fairly well-formed stool was passed and then perhaps the next stool was of thin, pea-soup consistence. For the most part, only small amounts were passed at a time. No mucus nor blood was observed during the first day or two.

The other systems showed little out of the way. The breathing was irregular and, especially during sleep, noisy. Respiratory sounds were unequal on the two sides and crepitations were audible at the left base. In addition to the enlarged glands already referred to, enlarged glands were palpable in the neck on both sides.

The temperature was sub-normal on admission and remained so thruout the rest of the time.

Diagnosis.—The diagnosis from the first gave rise to some difficulty. The patient reached the ward with the diagnosis of abdominal tuberculosis. Yet the clinical picture did not tally well with the label. You must be careful not to adopt hastily a previously expressed diagnosis. There was something in the color and aspect of the patient suggesting intoxication of another

kind. There was especially noticeable a marked sallowness along with the pallor. The uniformly low (sub-normal) temperature, in association with the continuance of the diarrhea, rather negatived tuberculosis. There were no indications of tuberculosis elsewhere.

None the less, because of the expressed diagnosis, it seemed desirable to make use of tuberculin tests. The result was entirely negative.

There occurred further the possibility—hardly likely—of the tail-end of a low form of enteric fever. Unfortunately, the clinical history of the earlier part of the illness was of the scantiest description. There was no enlargement of spleen or liver. The Widal test was negative.

Two points, already mentioned, afforded the chief key to the diagnosis namely, (1) the localized edema of the scrotum and (2) the increasingly frequent and ineffective calls to stool. Both of these suggested local pressure.

In keeping with this was the extra fullness and tension in the hypogastric region. The latter became more pronounced and more readily interpretable after washing out the bowel, when a considerable mass could be felt passing apparently downwards into the pelvis—deeply seated. The mass was irregular in outline and of dense, hard consistence, some points especially so. Here and there it was tender to pressure.

It is especially noteworthy that there was no trouble with micturition—neither increased frequency nor pain.

Manifestly, then, several points suggested the pelvis as the chief seat of disorder. Rectal examination revealed the presence of considerable resistance. The tip of the examining finger received the impression of an infiltrating mass of soft, friable consistence, and the examining finger was blood-stained.

For two or three days subsequent to admission the patient was comparatively comfortable. Thereafter much pain was complained of and this was only slightly relieved by lavage and fomentations. The pain was chiefly centered in the lower portion of the abdomen and around the umbilicus.

On the 18th December (some six days after admission) the localized edema of the scrotum was observed to be more pro-

nounced and the patient complained of pain in the right leg which was found to be somewhat swollen with definite edema of the ankle. There was no corresponding edema of the left leg.

The case was diagnosed as one of sarcoma of the pelvis.

The patient's condition rapidly became worse—both locally and generally—and he died early on the 23rd December.

Post-Mortem Examination. (*Dr. James Miller*).—The abdomen was found much distended, with considerable resistance at the lower part. There was little peritoneal exudate.

The pelvis was largely occupied by tumor tissue. The wall of the bowel from the rectum upwards for a considerable distance was infiltrated by the new growth, masses of which were found in the retroperitoneal tissue and running along the lines of the vessels. The retroperitoneal glands were much enlarged. Enlarged glands of dense consistence were found behind the duodenum. The mesentery was infiltrated with whitish masses of growth—some of these with hemorrhages—and a number of mesenteric glands were similarly involved.

On section, the rectum, whose wall was densely infiltrated by the new growth, presented on the mucous surface a large ulcerative area some 4 in. by 3 in. in extent.

The liver was somewhat small and pale. Its lower surface presented a number of nodules and one or two similar nodules were discovered in its substance.

The wall of the gall-bladder was thickened in places and apparently infiltrated by the new growth.

The spleen was small in size and presented one or two fibrous nodules superficially.

The kidneys showed little change. The pelvis seemed dilated. In the region of both suprarenals, masses of growth were found.

The left testicle seemed enlarged. This was due to infiltration of the tunica vaginalis with the new growth. The testicle itself was small.

There was a large mass of new growth at the root of the right lung, which was in part necrotic.

The heart showed a remarkable absence of fat. The muscle wall was atrophic. Minute vegetations were found close to the border of the mitral valve.

Microscopic Examination.—Section of the new growth showed the histological structure of a rapidly growing round-celled sarcoma of rather large type. The same characters were found in sections of the mass taken from the various situations—both pelvic and abdominal. The characters were so uniform that the pathologist felt unable to say certainly which was the primary site. The evidence as a whole seemed to point to the process having originated somewhere in the pelvic structures.

The case is relatively uncommon. It is not less important on that account. I have looked thru the records of clinical observers and cannot find many reports of similar cases. One is reported by Henoch. Because of the infrequency of the condition and the confusion as to diagnosis, which I mentioned at the outset, it seems worth while to cite Henoch's description (Lectures on Children's Diseases, New Syd. Society, Vol. II, p. 132).

"A boy of 5, who, except for whooping-cough, had always been healthy, presented as the first striking symptom, increase in the size of the abdomen and fretfulness. Later on were added edema of the face, lower limbs and genitals, pain in the abdomen, diarrhea and emaciation. In the hypogastric region we felt a hard irregular tumor, tender on pressure, which finally reached as far as the umbilicus, and its lateral processes extended into both flanks. On October 29, 1862, (about three months after the enlargement had been first noticed), death occurred from exhaustion.

POST-MORTEM.

Out of the depths of the true pelvis, into which it was regularly wedged, there grew a hard greyish-white tumor, which was hyperemic in places, and presented many lobes and fissures, which were slightly adherent to the right ilium, to the omentum, and to some of the intestinal coils. It had displaced the bowel and omentum upwards, and had filled up the whole abdominal cavity below the navel. No ascites, only a few tablespoonfuls of yellowish serum in the pelvic cavity. The epigastric glands, as well as those of the mesocolon and some of the mesenteric glands, were similarly degenerated and partially softened in the centre. The upper end of the right kidney presented

the same degeneration, and a few nodules, the size of a hazel-nut, were embedded in the cortex of the left. All the other organs normal. The tumor, the centre of which contained a cavity as large as a child's fist, filled with brown offensive matter, turned out to be a cystic medullary sarcoma (consisting only of small nucleated cells, and a few fibres of connective tissue), and seemed to have originated in the retroperitoneal lymphatic glands."

You must keep in view, gentlemen, that rare cases such as this may only turn up once in a man's experience. It is well that you begin to note such experiences even from your student days. I remember a shrewd old Edinburgh physician, who was kind to me when I started work here, remarking to me as he lay a-dying—curiously enough with malignant disease of the pelvis—"I wish much I had kept notes of the interesting cases I saw in my young days. They never seem to come again."

I strongly advise you to take the old man's hint. In any case, a recollection of the clinical features and pathological findings in the present instance may help to give you a clear and correct opinion when otherwise you might be entangled in the maze.

Case II.—Widespread Lymphadenoma in Woman of 25.—The next case is one involving glands widely thruout the body—particularly the cervical glands. On that account again there occurred confusion with tuberculosis.

The case is as follows:

Mrs. S., aged 25, was admitted to my ward (33) on 22nd September, 1916. She was transferred from the surgical house. The diagnosis, which accompanied her, was tuberculous cervical glands—inoperable. The query was raised, might tuberculin be tried?

History.—The history showed that the patient had been ill for about a year. She first noticed some twelve months ago that her neck was getting swollen. Associated with the local change, there was progressive systemic disturbance, the patient developing considerable weakness. Her appetite became very bad and she lost weight quickly. The doctor regarded the condition as tuberculous and sent her to the surgical house for operation.

Previous Illnesses.—There was nothing of importance to note.

Her home and dietetic conditions were satisfactory.

On examination, shortly after admission, (I had not seen her previous to her transference) she was found to be very much emaciated, extremely pale and ill-looking. Her temperature was 101.4° and I learned subsequently the temperature had been more or less continuously high during her stay on the other side. The continued high temperature was suggestive of causes other than tuberculosis.

Her neck was much enlarged. Great masses of glands presented themselves on each side—some of them closely welded together, some of them discrete. They reached, on each side, from the angle of the jaw to the clavicle, passing behind it both anteriorly and posteriorly to the sternomastoid. The masses were of markedly dense consistence and hardly moveable. There was no indication of softening at any point. There was no sign of pressure either on the trachea or esophagus. Some glands in the axillary region showed enlargement—not very pronounced.

The *respiratory system* presented one or two interesting points.

Cough was present. Expectoration in slight amount, not of important character.

The thoracic wall was very poorly clothed. The respiratory movement was impaired (inspection, palpation) on both sides.

Percussion showed dullness at both apices and markedly in the interscapular region.

On auscultation, the respiratory murmur was found modified at both apices, being bronchovesicular in character. There were no accompaniments. Elsewhere the breathing was feeble vesicular in type.

Alimentary System.—The appetite was very poor. Patient had been vomiting frequently during the last week on the surgical side. The bowels were loose. The abdominal wall was lax and sunken. No swelling was traceable but various tender points were found over the abdomen chiefly in the middle line. The abdominal organs seemed natural.

The *other systems* showed nothing out of the way.

Diagnosis.—The impression communicated by examination of the glands, the appearance of the patient, and the other features of the case, was decidedly against treatment by tuberculin (which had been proposed on transference). The physical

character of the glands, the concurrence of high swinging temperature and the slight vomiting, inclined me to revise the diagnosis. Several features—especially the aspect of patient and temperature—seemed to favor lymphadenoma or lymphosarcoma.

The correct diagnosis was determined by the abruptly fatal course of the illness. She was very ill when she was brought across and rapidly got worse. Within a few days of transference, she was moribund and died on the 28th, that is, six days after admission.

Post-Mortem Examination. (*Professor Lorrain Smith*).—The body was much emaciated.

No excess of fluid was found in any of the serous sacs.

The glands thruout the body were more or less universally involved. The superficial and deep cervical glands on the right side were very markedly enlarged. Several discrete glands were of the size of a pigeon's egg. On both sides, the enlargement involved the superficial and deep cervical glands. The tracheal, bronchial and bronchopulmonary glands and those of the anterior and posterior mediastinum were similarly enlarged. The lower posterior mediastinal glands formed elongated masses around the esophagus. There was one very large gland in the hilum of the right lung which, on section, showed an irregular caseous centre.

The glands of the abdomen, especially the hepatic, sub-pyloric and pancreatic, were also of large size. The para-aortic glands and those in the hilum of the kidney formed elongated masses, linked together but not coalesced, along the course of the vessels. The mesenteric, pelvic and inguinal glands seemed hardly, if at all, involved.

The heart was small in size and the muscle—notably of the left ventricle—soft and flabby.

The lungs were generally congested. Both lungs presented, at the apex, well marked puckering and underneath this there was found a fibrous and partly calcareous nodule about the size of a small marble. The remaining lung tissues showed no suggestion of tubercle. Firm pleural adhesions were present in relation to the lower lobes and the diaphragm.

The stomach and intestine showed little of much importance. The small intestine presented areas of congestion and small

lymphoid follicles were prominent in the lower part. There was no ulceration.

The liver was very large and fatty. The pancreas, which seemed natural, was embedded in a mass of enlarged glands.

The spleen was considerably enlarged and dark in color. It presented numerous pale nodules centred thruout its substance. The kidneys were both enlarged and fatty.

Microscopic Examination.—Section of glands taken from different parts of the body showed the histological appearances of lymphadenoma—the interfibrillar spaces of the stroma of the enlarged glands closely packed with crowds of lymphocytes. In none of the several glands examined was there a trace of tubercle.

The special interest of the case then lies in the fact that the cervical glands, for which the patient was especially sent to the medical ward, were not of tuberculous character—at least, in the ordinary sense—but lymphadenomatous. The later clinical observations suggested this view and it was confirmed both by the gross anatomical appearances and distribution of the enlarged glands and by histological examination.

Lymphadenoma was first described by Dr. Hodgkin ("On Some Morbid Appearances of the Absorbent Glands and Spleen"). Incidentally, I may remind you that Thomas Hodgkin was a doctor of medicine of Edinburgh University and described the condition associated with his name when he was little over thirty.

The possibility of an ultimate relationship between lymphadenoma and tubercle is still one of the mooted points in medicine. There is little doubt that a certain number of the cases originally described by Hodgkin—from which the name Hodgkin's disease was derived—were of tuberculous nature. In Hodgkin's day (1832), the methods of examination were necessarily less minute and exhaustive than at present. It is of immediate interest to recall that, in the case we have been discussing, while the glands thruout the body were more or less universally involved, and generally presented what is now-a-days accepted as characteristic of lymphadenoma, one large gland at the hilum of the right lung showed a considerable irregular caseous centre.

The findings in the lungs are of particular interest—namely, well marked puckering at both apices with an underlying fibrous

and partly calcareous nodule associated with pleural adhesions.

These apical changes are especially noteworthy, in the first place, as confirmatory of the clinical finding, namely, percussion dullness at both apices. You may recall further that percussion showed marked dullness in the interscapular region. In keeping with this, is the post-mortem discovery of masses of enlarged glands at the hilum.

The apical lung changes were certainly of tuberculous nature so that, while the cervical glands and those thruout the body generally are rightly described as of lymphadenomatous nature, they occurred in a patient who was undoubtedly the subject of tuberculous infection.

SOME MISCONCEPTIONS OF POLIO-MYELITIS.

BY

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Will the poliomyelitis epidemic recur this summer? "The history of poliomyelitis shows that it appears in epidemic form at fairly regular intervals. New York City suffered an outbreak of the disease in 1907, again in 1912. The Department of Health of New York City does not expect another epidemic outbreak of the disease in New York City in 1917." (*Weekly Bulletin of the Dep. of Health, N. Y. City, May 12, 1917*).

Poliomyelitis like any other disease depends for its existence upon at least two components, *viz.*: an infective agent and a susceptible individual. As a general proposition most infectious diseases furnish a survivor with a more or less lasting immunity. From an inspection of the records we find that in the city districts 80% of all cases occurred between the ages of 1 and 5 years. It is reasonable to assume that those chil-

dren in the cities between these ages, who were not infected, possessed a natural immunity. Those who were stricken and survived, now possess an acquired immunity. Since then the disease attacks susceptibles by preference during the ages of from one to five, it stands to reason that for at least five years the city of New York ought to be free from an epidemic form of this disease.

The reason that in the country districts the disease showed a preference for older patients may be found in the fact that otherwise susceptible persons simply succeeded in escaping the infection because the virus in the country districts is evidently more diluted.

It has been assumed that the black population enjoys a greater freedom from this disease than the white.

"On the basis of the population of the greater city taken as 5,000,000 which includes less than 100,000 negroes, or of 50 white to 1 black person, and assuming the susceptibility to be equal, we should have among the 5,496 cases, 109 of the black race. The complete figures for the black race of the entire city are 108." (Special investigation of poliomyelitis 1916 report of committee appointed by the mayor, pp. 9-10). These figures at once disprove the common assumption of greater immunity of the colored race for poliomyelitis.

Dental Caries as a Cause of Infection.—

Dr. Fisher has called the attention of the board of health to "the possibility of carious teeth acting as an avenue for infection."

Acting upon this suggestion, the *Board of Health Bulletin*, May 12, 1917, calls attention to the possibility of carious teeth being a port of entry.

It happens to be fashionable just now to

ascribe every infection to carious teeth, in fact the matter has been much overworked.

"Altho seventy-eight per cent. of all reported cases of poliomyelitis occurred in children under five years of age," (*Weekly Bulletin Board of Health*, May 12, 1917) as a matter of fact carious teeth in children under five years of age are a rarity; while in adult life when carious teeth are the rule, poliomyelitis is the exception.

It is of course understood that nobody objects to proper dental hygiene, but we must not be misled into looking for a source of infection when all of the facts seem to point to an absurdity.

Is Poliomyelitis Contagious?—"A special study was made of a group of 250 cases in families in which more than a single child was attacked. (Table IV). No instance was encountered in which the first child affected was six months old or less. However, at one year of age, when a child is able to move about of its own volition and is left at times on stoops and doorsteps to play, thru which greater exposure occurs and hence opportunity for infection increases, our records show that fifteen children of this age group were the first in the family to develop poliomyelitis. At the next age period, namely two years, when the child is still more active and independent, 49 children were the first to be taken ill in the family, while at three years of age the number first infected has increased to 60. Hence these examples would seem to indicate that the danger of infection increases with and depends largely on more frequent contact of one child with another." (Report of Special Committee, 1916).

A superficial glance at Table IV and the deductions by the committee would seem to

warrant their correctness. Yet, for the sake of throwing more light upon the question, let us ignore the word "contagious" for the moment and let us substitute the words "infectious and susceptibility."

It is a well recognized fact that certain diseases are closely associated with certain ages. No one would look for measles in the aged, any more than one would expect to find cerebral apoplexy in the young.

We know that a child is especially susceptible to poliomyelitis between the ages of

47 secondary. Again in the secondary cases less than 2% of the cases are represented.

At the age of two years, or as the susceptibility rises we find that there is no practical difference between 49 primary and 51 secondary cases.

At the ages of 3-4-5 years "contagious" seems to meet its Waterloo.

We have an aggregation of 123 primary and only 74 secondary cases. If it is true that at the age of one year "when a child is able to move about of its own volition and is left

TABLE IV.

STUDY OF 250 FAMILIES MORE THAN ONE CASE IN FAMILY.

FIRST CASE IN FAMILY.		SECOND CASE IN FAMILY.	
Age of Patient	Number of Cases	Age of Patient	Number of Cases
6 months	0	6 months	16
1 year	15	1 year	47
2 years	49	2 years	51
3 years	60	3 years	39
4 years	37	4 years	16
5 years	26	5 years	29
6 years	20	6 years	15
7 years	15	7 years	11
8 years	12	8 years	13
9 years	7	9 years	5
10 years	3	10 years	4
10-15 years	3	10-15 years	3
15-20 years	0	15-20 years	0
20-30 years	1	20-30 years	1
30-40 years	2	30-40 years	0
40-50 years	0	40-50 years	0
Over 50 years	0	Over 50 years	0

(Report of Special Committee, 1916).

one and five. A child at the age of one month is however not any more immune than a person at the age of 30 years. In looking at the table we find that at 6 months there were no primary but instead we find 16 secondary cases. Two hundred and fifty families are included in this report, 16 secondary cases were discovered or less than 1%. Is it fair to base our deductions on something that happens in less than 1% of the cases?

At the age of one year where the susceptibility is greater, we find 16 primary and

at times on stoops and doorsteps to play when opportunity for infection increases" then by logical deduction a child at ten or twelve who mingles with hundreds of children over miles of area ought to contract the disease much more frequently. As a matter of fact a child at the age of one year is as helpless as the one at the age of six months. Seldom a child at the age of one year "moves about at its own volition." Usually a child at that age is confined to a perambulator or is carried about by its elders, its volitional movements certainly do not com-

pare with those at the age of ten or twelve years.

In this particular table the word "contagious" is based upon the following: "hence these examples would seem to indicate that the danger of infection increases with and depends largely on more frequent *contact* of one child with another." At three years of age we have 60 primary cases and in spite of the "more frequent contact" we have only 39 secondary cases. Here it is not evident that the matter of "personal contact" plays a very important part.

numerous instances where diagnosis is not made until late, so that the patient is not isolated for several weeks after the date of crisis and yet no apparent secondary cases appear, the fact is that the longest period observed where a primary case was apparently the source of infection was only ten days." (*Weekly Bulletin of Board of Health*, June 9, 1917).

Hospitalization.—"The removal to hospitals is approved of patients affected with poliomyelitis when proper isolation and satisfactory care for the patient cannot be secured in the home, but during the early

TABLE V.
REPORTED POLIOMYELITIS BY THE BOARD OF HEALTH.

Number of cases.	Number of children residing at home.							
	1	2	3	4	5	6	7	8
1 case in family	989	1200	951	645	376	210	113	44
2 cases " "		108	73	50	30	18	6	5
3 " " "			8	4	2	2	1	
4 " " "				1	1			
5 " " "					1			1

(Special Committee Report, 1916).

If we turn to Table V arranged by the special committee we discover that the greater the number of children living at home the fewer the infections. In families with two children 1,200 of such families had only one case of the disease. Two cases, that is where both children suffered during the same epidemic, occurred only 108 times. In a family of five children at home one case occurred 376 times; three cases of poliomyelitis during the same epidemic in a family of five occurred only in two instances.

Such records certainly do not point to a very strong contagiousness.

Isolation.—"Isolation is a useful measure for limiting the spread of the disease. It is often without demonstrable effect, because of the general prevalence of unrecognized cases and carriers. On account of the

stage of the disease the patient needs rest in bed, and transfer to a hospital may be detrimental to his welfare." (*Bulletin Board of Health*, June 9, 1917).

From the above quotations it appears that isolation has not demonstrated its usefulness and that the removal of a case of poliomyelitis in the early stage may be detrimental to the patient. After ten days have passed there appears to be no further danger of secondary cases.

In other words three or four days are usually required to render a positive diagnosis. When this has been done the patient requires absolute rest in bed for the next week at least; after ten days no secondary cases have developed.

Should this community be so unfortunate as to be again visited by an epidemic of

poliomyelitis within the near future, there is every reason for believing that there will not be a repetition of the almost hysterical manifestations brought about largely by the universal and compulsory removal of all, even only suspicious cases.

In view of the fact that the contagiousness of poliomyelitis is certainly of a very mild type and since the infection is evidently air borne, does it seem wise to concentrate a large number of cases in any one place? Would it not be better to have individual cases segregated instead of concentrated so as to dilute the virus as much as possible?

The regulations concerning the removal of cases to hospitals appeared in the *Weekly Bulletin*, June 16, 1917.

According to these rules it will be almost impossible for a family of moderate means to keep their patient at home. I am now more than ever convinced that the average family physician can do full justice to the patient, as well as to the community. There is one thing certain, in the epidemic of 1916 it was not demonstrated that hospitalization even in the slightest degree minimized the number of cases.

"It is interesting, in view of the great excitement of last summer, to note that the use of travel certificates is not recommended and that surveillance of persons coming from infected districts is unnecessary unless there is a definite history of exposure to infection." (AMERICAN MEDICINE, June, 1917).

Poliomyelitis as an Infectious Disease.—Poliomyelitis does not differ from other infectious diseases in its general aspect. The virus is air borne, if there is present a susceptibility, distance seems to offer no security.

The Schick test has revealed to us the

fact that certain children in the same family have or have not a susceptibility to diphtheria. Those of the children who have such a susceptibility will in all likelihood contract the disease if they happen to be where there is even only an endemic case. Those who have not the susceptibility would in all probability not become infected tho they resided right within the epidemic area.

Such a condition evidently applies to poliomyelitis. It is a case of an infectious air borne virus and a susceptible individual.

"Dr. F. Tilney of New York said there were comparatively few people susceptible to the disease, or else it would seem that it was not very contagious, for there were comparatively few group or family cases during the epidemic, and its occurrence in hospitals and institutions for children was negligible. Contagiousness had not been proved to be the cause of the epidemic of last summer." (*N. Y. Med. Journal*, June 30, 1917).

"Dr. Charles Herrman of New York stated that the epidemic of acute poliomyelitis which occurred in New York City was the largest recorded. * * * * * In the epidemic of 1916 about 2 per cent. of the children under 13 years of age who were exposed to the infection contracted the disease. * * * Measles infected 96%, whooping cough 75%, scarlet fever 25%, diphtheria 20%." (*N. Y. Medical Journal*, June 30, 1917).

Suggestion for Prophylaxis.—We must endeavor to find a test similar to the Schick test to be applied for poliomyelitis, then find something which will have the effect of negating the susceptibility. Immune human serum seems to answer such a purpose at the present time. It is not necessary that every child receive such an immunizing dose,

on the contrary, only such children should receive it as will show the susceptibility after testing.

Diagnosis.—"Dr. George Draper of New York said that early diagnosis, which was particularly important during an epidemic, was very difficult, but it was made easier by repeated lumbar punctures of suspected cases, the fluid findings being helpful in conjunction with the clinical symptoms." (*N. Y. Med. Jour.*, June 30, 1917).

Unfortunately in cases of poliomyelitis there are no prodromes. This being so, when the diagnosis is confirmed, it is too late for immunizing that particular patient.

"Dr. H. L. K. Shaw of Albany said the term 'infantile paralysis' did not fit the disease, as a large proportion of patients was not paralyzed, and in the country were not infantile cases." (*N. Y. Medical Journal*, June 30, 1917).

Mr. B., age 35, referred to by Dr. C. P. Hassey of Suffern, N. Y., was suddenly taken ill four years ago; he was then 31 years of age. For a few days it was thought that Mr. B. was suffering from malaria. At the end of the first week Mr. B. was completely paralyzed and has remained so during the past four years; at the present writing Mr. B. is improving and able to get about on crutches. When Mr. B. was first stricken, his infant son age 8 months slept in the same bed with him but never showed any signs of the disease.

Baby G., age 4 years, referred to by Dr. Klinberg, was stricken during the 1916 epidemic with the result of a complete paralysis of both lower and one upper extremity. An elder sister age 7 years was stricken at about the same time with the result of a complete recovery within a few weeks from the onset. One child recovered completely without any

treatment, the other remained paralyzed in spite of the usual treatment.

Therapeutics.—"Electricity is used for diagnosis and treatment. Muscle contraction may be produced by the faradic current, but the galvanic interrupted 18 times to the minute is better. However the sinusoidal is preferred and is much better for the very young children. Massage stimulates the circulation. Muscle education is done by active and passive exercises before a mirror. Heat is applied by electric light bakers. At bedtime it is suggested that the limb be immersed in water at a temperature of 90° to 100° for 20 minutes." (H. W. Frauenthal, *N. Y. Medical Journal*, February 17, 1917).

"Electricity is usually more likely to be harmful than beneficial." (The after care of infantile paralysis—Robert W. Lovett, *Journal A. M. A.*, April 7, 1917).

"Electricity has no effect whatever on the degenerated spinal cord cells and is of service mainly in inducing contractions in muscles in which voluntary contraction is impossible, and the writers are in doubt as to whether any real good is accomplished by it in poliomyelitis. Massage is condemned, as it does more harm than good in the delicate atrophied muscles." (I. W. Strauss & P. W. Nathan, *N. Y. Medical Journal*).

We have here two opinions expressed which are diametrically opposed to each other. If one is right the other must be wrong. As neither side has produced any reason for their opinion we will try to supply the missing.

All therapeutic measures ought to be such remedial agents as will tend to re-establish the normal physiology of the parts involved.

In the paralysis of poliomyelitis we are dealing with a peripheral motor neuron le-

sion. Some one or more of the large multipolar motor nerve cells in the anterior horn of the gray matter of the spinal cord have been destroyed. These cells are the trophic centres for the muscles which they supply.

Every muscle, no matter how large or how small, is under the direct control of one or more of these trophic centres. The flaccid paralysis of the muscles is therefore the result of two factors. First, no motor impulses can reach the muscle from the spinal cord. Secondly, non-use sets up a reflex effect thru the same communicants which causes spasm of the blood vessels to the affected part; the result of this spinal lesion is a cold, flaccid motor paralysis.

The real trouble is not in the paralyzed limb, that is simply the unavoidable consequence of the condition in the cord. It follows very naturally that as long as the spinal cord condition remains unchanged, so long must the peripheral conditions remain unchanged.

It has been stated that faradic, galvanic and sinusoidal currents cause muscular contractions.

Of what value are muscular contractions in a muscle that has lost its trophic centre? It must be apparent that a muscle which fails to receive nourishment should not be expected to perform labor. Any electric current which simply causes muscular contractions may further use up such a muscle; it certainly can not change the original cause of the paralysis. Muscular contractions produced by an electric current in a muscle cut off from its trophic centre are therefore worse than useless.

Massage.—Since 80% of all cases of poliomyelitis occur in children under five years of age, and since marked atrophy is an early and ever present accompaniment of

this disease, it is difficult to see just how massage to the paralyzed atrophied non-present muscle fibres in a child can be of any benefit.

It may be claimed that massage improves the circulation. Where and in what tissue does it improve the circulation? The muscle tissue which is cut off from its trophic centre is bound to atrophy; nothing can stop it. To improve the circulation in the skin, the fascia, the tendons or the fat is certainly sheer nonsense. Massage is therefore of no practical value in poliomyelitis.

Heat.—All externally applied heat whether produced by electric bakers, incandescent lamps, dry or moist heat, hot water bags, sand or salt bags can only penetrate 3-5 millimeters or about one-fourth of an inch. The lesion does not lie in the skin; the wasted or absent muscle tissue can not be affected by this heating process. Externally applied heat therefore is to say the least unphysiological. It does not and can not change the lesion in the cord.

Muscle Education.—A muscle which is completely separated from its trophic centre in the cord is bound to atrophy. Such a muscle can not contract, therefore can not be educated.

If, however, a few muscle fibres remain in contact with the trophic centre, or if regeneration occurs, then such muscles can again contract. Such muscles, by judicious training can be developed, in fact, as a rule, they develop themselves. A child between the ages of one and five years is ever willing to make use of its muscles, it does so involuntarily. The moment that such a patient becomes aware of the fact that motion is remaining or returning, they require very little coaxing. Frequently more harm is

done by overtiring such muscles than by leaving them to nature.

Resume.—1. Poliomyelitis is an infectious air borne disease, spread by healthy carriers along the line of travel to susceptible individuals.

2. Susceptibility is most marked during the first five years of life.

3. Poliomyelitis is much less contagious than any one of the acute exanthematous diseases.

4. Isolation may be of benefit; hospitalization appears, if not detrimental, of doubtful value.

5. Early diagnosis depends upon clinical observation assisted by spinal puncture.

6. Electric currents are useless as diagnostic aids.

7. Electric currents for the purpose of causing muscular contractions are not only useless, but are positively contraindicated.

8. Externally applied heat, from whatever source, has little or no influence upon the paralysis.

9. Massage, while harmless in itself, is of no value to the patient.

10. Braces, judiciously applied, may be of mechanical service to the patient; they are also capable of much harm.

11. Muscle education is of value after the muscles have recovered power to contract; care must be exercised so as not to overtire the recuperating muscles.

12. The lesion of poliomyelitis is in the trophic centres of the spinal cord, the paralysis of the muscles is secondary.

13. Diathermia is the only agent known so far that can and does influence the spinal lesion; cases are recovering now from this method of treatment that have resisted all other methods for the past twenty years.

14. A test similar to the Schick test must and will be found to detect the susceptible cases.

15. A neutralizing serum is the most likely agent to negative the susceptibility.

231 W. 96th St.

Purulent Peritonitis.—Patients with purulent peritonitis should be put into Fowler's position before as well as after operation.—*Amer. Jour. of Surg.*

MY FIRST WEEK AS AN INTERNE.

BY

PAUL HEADLAND,
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I entered under unusual conditions. I was to substitute during the holidays for my friend, Dr. Meggers. The hospital was a small, old-fashioned residence, which, having outlived its desirability as a home, had been converted into a place of healing. It boasted 35 beds and 2 internes. That is, there had been 2 internes. Now there were none. I, a junior, was to have the field to myself until such a time as they were able to get another interne. Dr. Menard, president of the institution, was not there when I arrived, but his wife, one of those short, plump, beruffled women, who give you the impression of wanting to mother the whole world, and then surprise you, by showing an exceedingly large amount of shrewd business ability, proceeded to start me out in my new work.

"I'll show you this floor first," she said, starting toward the rear, I following her with more or less trepidation. "This," entering a small room, which contained an examining table and an instrument stand, "is the room in which we treat minor cases that come in for dressings." I nodded a comprehending head, at any rate that was the impression I meant to give. Turning to the other side of the hall, she pointed to a row of charts on the wall and said: "These are the history sheets of the patients on this floor. You can look them over and see what the cases are. One of your first duties will be to see that all the histories are written up." Never having written a history I answered, "Yes, certainly" in a very commendable sort of voice. We were now met in the hall by one of the attend-

ing doctors, to whom I was presented. I didn't like him. "I have a specimen I would like to have you analyze for me, doctor," he said, turning to me. "Oh yes," interrupted Mrs. Menard, "I'll show you the laboratory." She started for the basement, Dr. Moncouth and myself following, I, wondering what I was getting into now. The laboratory was a small, cold and damp room, two walls of which were lined by shelves, filled with bottles.

"I think you will find everything you need here, doctor. I'll be up in the office." And with these comforting words she left me with Dr. Moncouth. He gave me the specimen and I made the tests. I did the work poorly, because I neither knew where any of the reagents were nor was I sure of my method. This in no wise helped to improve my feeling for the doctor. Later I was to find out that he liked me about as well as I liked him. Having finished the tests, I joined Mrs. Menard in the office and we started for the second floor. Here I was shown more history sheets and how anxiously I looked at each one to see if any of them had been written up.

"You see Dr. _____," Mrs. Menard started. "Headland" I supplied.

"Oh! Yes, well our internes both left us rather suddenly. Dr. Cure had to go to the Ghetto, and Dr. Ray was called home to Texas. We had been depending on him to stay over the holidays, but he failed us. So, I am afraid you will find most of the histories unfinished."

"I'll write them up as soon as I get around to it." I answered Mrs. Menard inwardly cursing both Cure and Ray. From here we went up to the third floor where we looked over more unwritten histories. The operating room was on this floor, and

I remember having a hazy impression of it being too small and poorly lighted. But I think I received very few definite impressions of any kind during that whole day. Realizing my limited knowledge, I was continually in a rather uncomfortable frame of mind, wondering how I was going to "get away with it." I felt that they must surely see how unfit I was to do the work. At this time I was called down to the first floor to make a dressing on an outside case. I wondered what in the world it was and what I was to do with it. Being introduced to the man as doctor and the poor man's confidence in me, combined with his attitude which assumed that I was able to take care of the case, gave me a better feeling, and I went ahead and dressed the wound, the technic however being wholly original.

From now on I was called from one thing to another in such rapid succession that I had no time to think of anything except the case in hand. The attending doctor kept coming in and I went with each one to see his patients, and in this way I got to know what the cases were. At first I felt rather deceitful about allowing myself to be introduced as a doctor, but everyone's ready assumption that I was a regular interne helped me to live up to my title.

When dinner time came around, I was shown to the dining-room in the basement and assigned to the seat at the head of the table, both sides of which were lined with nurses. During the meal I was impressed by two things in particular. The nurses were all sadly lacking in good looks, and there was a decided draught from the window at my back. The food must have been fair, as I don't remember it as being either good or bad. But my mind was little bothered by such details then. Later, I was

to find out that the meals were not of a character to tempt a fastidious appetite.

During the early afternoon I had a short period to myself, so I started to put the laboratory in order. I had a job before me. I have always been a crank on system and cleanliness in my surroundings. I find it more pleasant to work and consequently get better results. Upon investigation, I found that every drug house in the country was represented by samples. About one-third of the bottles with usable drugs were empty. As equipment there were three small test-tubes in a half broken stand. The centrifuge only worked when in high speed and in its ambition it had separated itself from the base. Dr. Menard came in while I was still at work and noticing what I was doing, started in to make himself agreeable by saying that one of the marks of a successful doctor was system and order. Personally, I believe Dr. Menard is given to saying a lot of nice things which do not mean anything in particular. However, at that time I was susceptible and it pleased me to find favor in his eyes. I think I needed a little encouragement of that sort. Dr. Menard you will remember was the president of the hospital. Still I had the feeling that I was deceiving these people and that I was standing in a false position. Dr. Menard's offer to help me out with anything which I did not understand, gave me an opening to tell him that there were several things with which I needed help. I wouldn't have admitted this to anyone else. He was very considerate and gave me some helpful ideas and suggestions.

That laboratory was a problem and the first definite impression I remember having, was that a hospital with such a laboratory must be run in rather a slipshod manner.

This thought made me feel that maybe there were conditions which I could help better in some ways, and so I felt more comfortable about being there.

That first day passed like a dream in which I was constantly meeting new conditions, but thru it all, I went about in a quiet orderly way, doing what I could in as thoro a manner as possible, and no one guessed what turmoil and confusion lie beneath that calm exterior.

I went to bed very tired that night. My head was in a whirl from having been dealing all day with conditions with which I was not familiar. I would have greatly appreciated having had some one with me to whom I could have talked about what chance the University of Chicago had to win the basketball championship, or some such subject about which I was thoroly conversant.

The next day I received a helper in the person of Dr. Ashley. He was a friend of mine from school, which was pleasant but the important point was that he was one year less advanced even than I. I realized that if any condition arose which I was unable to handle, I could expect no help from him. However, Dr. Ashley turned out to be a very valuable laboratory man, and he did most of the work sent down to us.

From now on my mornings were usually spent in the operating room, for in spite of the fact that it was the holiday season, we operated every day and frequently at night. It was with a great deal of apprehension that I "scrubbed up" for my first operation. The only thing I knew about operating-room technics was to be sterile. But how? I had often watched the doctors prepare for an operation at the Cook Co. hospital clinics, but it seems that one never notices

details. The old saying "when in doubt do as other people do" helped me out. It is remarkable how much one can gather from observation when you are up against a proposition. Finally we were ready to operate, the patient was asleep and I was to be first assistant.

They say every doctor must pass thru the process of fainting in the operating room, before he is a "regular." I had gone thru mine some time ago, so I had that advantage. I don't know whether Dr. Barnette had that in mind or not, but when I asked the nurse to come over, he looked at me in an amused way. However, I merely wanted the nurse to wipe the perspiration from my forehead.

I enjoyed the surgery very much and the doctors were nice to me. The more I heard these doctors argue and talk about the cases, the less the distance between them and me seemed to grow. The practice of medicine, was, after all based on a few fundamental principles and laws. The difference between the doctors and myself was that they knew the details of those fundamentals. But what a lot of large and unnecessary terms they used, and what a round about way they took to say what could have been said with much better effect in fewer words. This was a shock in a way, yet, it served to show me that I didn't have such an endless way to go after all, and brought the goal much nearer.

By this time I had adjusted myself to the life here and was beginning to enjoy it. One of my duties was to make the round of the patients, the first thing in the morning, and whenever a dressing had to be made, I always did it with great care. I was rapidly becoming personally acquainted with all the patients and I made it a point

to see each one three times a day, and with the convalescents I would step in and say "Hello" whenever the opportunity presented itself. But I shall not soon forget how Dr. Ashley and myself used to sneak away for a few minutes, during those first days, and run down to our little laboratory. Here we would drop our professional titles and airs and speak to each other with the freedom of our school days. I know that I had the feeling of having slipped away from a fancy dress ball, with some one I knew, to take my mask off and get a full breath. I had always had a contemptful feeling for the student who prematurely called himself doctor, so it was gratifying to have some one address me without the prefix. Of course, I realized that before the patients and nurses we must act the part. I can say for myself that I fell into it very readily. And I was pleased to notice that the nurses carried out my orders not thru any fear of me or my position, but because I made them feel that it was necessary for the patient's welfare. Indeed, they all seemed willing to do what I told them to. I, in turn helped them with many things.

I well remember one day in the operating room, I was assisting old Dr. Holmes do a tonsillectomy on a young man. It irritated me to notice the slow and puttering manner in which he started the operation. Finally, he had the first tonsil dissected out, the wire loop was in place, and he began to tighten up on it. "Now" I thought, "we will have this one out in a second." But no, indeed, he gripped the handle, he twisted, he turned. "Hard as a rock," I heard him mutter. "Take ahold and feel of this, doctor," he said to me. Being on the right side of the table I reached over with my left hand and

grasped the handle of the instrument. Maybe I was angry at this unnecessary delay, maybe I forgot that I had a stronger grip than the average man. Suffice to say, before I realized what had happened I was holding the snipped tonsil in one hand and the instrument in the other. I shall never understand how one can maintain a calm exterior when such chaos exists within. "I am sorry, doctor," I said in a low voice. "I forgot my strength." Whatever he thought he passed it off as if it was the natural thing to have done. I was pleased to see a perfect removal with no hemorrhage. In fact it surprised me, as all the cases I had helped with before had been very bloody. I happened to look at the nurse giving the anesthetic, and the expression of her face pleased me, and yet, made me feel very foolish. She had a keen sense of humor and was enjoying the situation from two different angles. She realized my chagrin, which amused her, and she was glad that for once some one had shown Dr. Holmes how easily and quickly it could be done. But very evidently Dr. Holmes was not affronted, as he was most cordial after the operation, and he stayed for some time to discuss different cases with me.

There was another time when I thought that I was going to be severely reprimanded, but it turned out very pleasantly. Dr. Parke brought in a case, but he and his confrères could not decide whether it was just an ulcer of the stomach or whether it was a carcinomatous condition. They wanted an exhaustive laboratory examination, by which they hoped to check up their diagnosis. Thru no fault of Dr. Ashley's or mine, we did not have all the results ready as soon as we should have. But they decided to operate any way. Dr. Parke was the sur-

geon for the case. Now, I had assisted him in several operations before, and I knew him to be a "bully" in the operating room. I had frequently seen him make the nurses cry by his abuse. Yet, I liked the man. To me it was evident that this attitude was just an affectation, rather to be overlooked than condemned. Nevertheless, I had a very clear idea of what was in store for me, so upon some pretext or other, I stayed down in the laboratory, thinking they would start the operation. But it was so to be. The telephone rang and the office girl's voice told me that I was wanted in the operating room at once. I started up, smiling a bit wryly, at what I thought my predicament. Imagine my surprise, when entering the room of action Dr. Parke told me to scrub up and help him. However I was still expecting something, altho my spirits were rising. But the operation went on to its finish without any outburst from the officious surgeon. I found out later that Dr. Ashley had told him that the inadequate laboratory equipment was to blame.

During the operation one of the visiting doctors asked who had made the blood tests. I replied, informing him that I had "run" the tests in question. Promptly Dr. Parke spoke up.

"Would you be willing to go to court and swear as to the accuracy of those results, Dr. Headland?"

"Why, certainly Dr. Parke," I answered in an emphatic but injured tone of voice. to think that he would doubt my efficiency. So, each of us having had our little joke, we became very friendly.

The days from now on passed very quickly. I was slowly becoming conscious of a new and wonderful feeling. It seemed like realizing a beautiful but rather hazy dream

that I had always cherished,—that of being able to relieve suffering. To see the patients thank me with their eyes, after I had done something for them, was worth more to me than the biggest fee ever collected. To have them change their frown of pain into a smile of welcome as I entered the room made me feel prouder and happier, than ever king felt upon receiving his jewelled crown. You of my readers who have passed beyond the land of dreams and sentimentality and have probably, more or less, commercialized your profession, do not sit back with pity and scorn and smile at the enthusiasm and idealism of youth. In this day and age it is much to be encouraged.

Suffering has always had a pronounced effect upon me. Often have I felt that I would gladly take upon myself the burden, whether mental or physical, if that were possible, in order to relieve someone else. Maybe this can be accounted for, by the fact that I have gone thru the extremes of emotion and feeling. Sorrow and pain drag me down to the very bottom of misery and conversely joy and happiness carry me to the heights of delight. Anyone who is subject to such emotional variation, is apt to appreciate the feelings of other people, be they of joy or sorrow. Thus it was, that I noticed with pleasure any sign of relief amongst the patients.

I must relate how I spent my time on New Year's eve. Having finished my round after supper I decided to go to bed early as I had been called up for several nights and was rather tired. While preparing for bed I thought of the extensive party I was missing downtown, with my friends. But it was with a feeling particularly free from regret that I rolled into bed. Parties seemed to have lost their importance.

I was soon sound asleep and neither bell nor whistle that so joyously ushered in the new year, disturbed my rest, but at 12.30 my telephone rang and I was wide awake at once. An emergency case had been brought in and I was needed. A few minutes sufficed for me to reach the office. Dr. Barnette who had come in with the case, met me and told me all about the patient, a boy, nine years of age, suffering as we found out later, from tuberculosis, pneumonia and general malnutrition, with the history of having refused all forms of nourishment for two weeks, and now in great pain. We at once went up and made our physical examination after which Dr. Barnette left me in charge, asking me if I would make the laboratory tests as soon as possible so that he could complete his diagnosis when he returned in the morning. Upon leaving, he handed me a box of cigarettes and a one dollar bill, and thus I received my first medical fee. I finished my work at 4 o'clock and having made the patient as comfortable as possible, I went back to bed to get a couple hours of sleep before starting in the New Year. I did not get much rest, as I was continually making the wrong diagnosis in my dream work, so that it was a relief to get up and visit the little patient in body. It was with pleasure that we saw him respond enough to our treatment to get a little rest, of which he was sadly in need.

The next day was to be my last at the hospital. As I made my final round on the following afternoon I was surprised as well as pleased to hear the patients express their regret over my departure. I shall never forget one fellow whom I had helped Dr. Davis operate upon. It was a case of appendicitis which had been neglected. We found the appendix gangrenous and rup-

tured and he had a rather poor chance for recovery. The anesthetic caused him a great deal of postoperative suffering, so I stayed with him for about two hours trying to give whatever relief I could. For two days he was in a very critical condition and I spent a lot of time with him. However, he had appeared too sick to notice anyone so I was rather surprised to have him tell me that I had been instrumental in bringing about his recovery. With tears in his eyes he said that sympathy was the greatest medicine any doctor could give. Do you, gentle reader, think that I was repaid for the service I had given him?

Somehow I felt very sick that afternoon as I left the hospital, and as I reached the end of the block I turned and looked back at that little, old building, wherein I had spent the most wonderful and momentous week of my life. Its outline became blurred, but my mind's eye saw very clearly each room with its patients and it was with a sigh that I hurried to the elevated station to catch my train for home.

A NEW SUBSTITUTE FOR THE FEHLING SOL. ACCORDING TO THE U. S. P. FOR THE REDUCTION TEST OF GLYCOSE.

BY

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The new Pharmacopeia has changed the Fehling copper solution to the extent of substituting 50 gm. of NaOH of the U. S. P. IX for 75 gm. KOH U. S. P. VIII. All other ingredients have practically remained the same. Two features have to be especial-

ly considered in the making up of the solution's first phase: to weigh out very accurately, the copper sulphate $\text{Cu SO}_4 + 5\text{H}_2\text{O} = 34.66$ gms. for 500 cc. or mls of distilled water practically or approximately 6.93 or 7% sol.; and second to add fully 50 gms. by weight of sod. hydrate, NaOH so as to obtain *strong alkaline* reaction of the mixed solution (most predominant part of the Fehling's reduction test for glucose, the 173 gms.). Potass. sod. tartrate (Rochelle salt) added in U. S. P. VIII has not been changed in sol. II or B. The copper-sulphate sol. as such I or A should only be mixed before being used with No. II or B. These are the precautions for the Fehling sol. All other modifications of "*Bang*," "*Klein*," and others, etc., to obtain more stable solutions by adding to the mixed Fehling KCN, KCNS, $\text{C}_3\text{H}_5(\text{OH})_3\text{Na}$, $\text{C}_6\text{H}_5\text{O}_7 + \text{K}_4\text{FeCN}_6$, CH_3COCH_3

KCN = Potass. cyanide

KCNS = Potass. thiocyanide

$\text{C}_3\text{H}_5(\text{OH})_3$ = Glycerole

$\text{Na}_3\text{C}_6\text{H}_5\text{O}_7$ = Sod. citrate

CH_3COCH_3 = Aceton

$\text{K}_4\text{Fe}(\text{CN})_6$ = Yellow prussiate or
Potass. ferrocyanide

have proved to be very accurate and with a more definite color change in the reduction of the glyose for qualitative and especially quantitative tests.

But considering further that all the additional salts to stabilize the Fehling are to be used in highly concentrated form the solution in comparison then will be especially at present a rather expensive solution for testing diabetic urine and other saccharine compounds of the hexotype. We therefore wish to state and recommend a solution used in our laboratories for the qualitative and

also quantitative tests of glyose which is practically simple, and extremely diluted, but equally accurate and also non-expensive if compared with the mixed Fehling sol. U. S. P. The ingredients in solution A and B are:

A: O, 35% coppersulphate solution ($\text{CuSO}_4 + 5\text{H}_2\text{O}$) and second

B: 10% (NaOH) sod. hydrate solution.

As a matter of fact all coppersulphate solutions react acid; it is imperative therefore to neutralize the acidity with an alkali to obtain a complete reduction of the saccharine compounds. We then proceed as follows in our method: 4cc. of coppersulphate sol. A is mixed with equal parts of urine or saccharine sol. mixed well and to this sol. is then further added $\frac{1}{3}$ in volume of a 10% NaOH sol. B and again thoroly mixed.

This mixture or solution is then divided into two test tubes (equal parts in each) and one tube is then heated to boiling, which consequently then changes its color as table below will show (straw yellow normal urine color).

N. B. The normal urine, in the second tube heated to boiling after 4 or more hours retains its bluish green color, or black if urates are present in very large excess. The boiled urine with the same cold treated specimen has a more yellowish dirty green looking color. Cancer, syphilis, tubercular and pregnant urines behave indifferent and do not affect the color reaction which is so marked as a red colloidal (Cu_2O) sol. more so than in the regular Fehling sol. according to the U. S. P. with the diabetic or saccharine sol.

The cold treated diabetic specimen with our coppersulphate sol. and sod. hydrate, as

stated above first changes its color to a yellow, and after 5 or more hours assumes almost the same reddish brown or dark red color as the specimen boiled which almost at once assumes the *red colloidal copper-oxide color*, Cu_2O only gradually forming a precipitate on an excess of brownish black Cu_2O . The cold treated specimen shows a brick red Cu_2O precipitate.

The normal urine precipitates are not of a *crystalline nature*, but are flocculent and not as massive as the diabetic spec.

PREPARATION OF THE SOL. A AND B.

Our sol. A coppersulphate can easily be made or prepared if the regular U. S. P. Fehling's sols. (I and II, or A and B) are kept in stock. 5 cc. or mls of the regular U. S. P. Fehling sol. A is added to 100 cc. or mls of distilled water giving the extremely diluted 0.35% copper sol. used for our test, or the latter amount by weight of coppersulphate dissolved in water. This constitutes our sol. A as used in our test.

The sol. hydrate 10% is made by dissolving 10 grams of pure NaOH in 100 cc. or mls of distilled water. This is our sol. B.

TABLES.

With 0.35 $\text{CuSO}_4 + 5 \text{H}_2\text{O}$ sol. A acid reaction.

NORMAL URINE.

No. I.

Urine cold.
4 cc. urine
4 cc. sol. A
 $\frac{1}{3}$ sol. 10% NaOH
bluish green color
with flocc. ppt. after
standing for some time.

No. II.

Urine heated to boiling.
4 cc. urine
4 cc. sol. A
 $\frac{1}{3}$ sol. 10% NaOH
Assumes natural color back straw yellow,
after cooling and standing for 4 and more
hours retains the bluish green color with flocc.
ppt.

$\frac{1}{2}$ by volume for
boil test.

DIABETIC URINE.

No. III.

Urine cold.

4 cc. urine

4 cc. sol. A

 $\frac{1}{3}$ sol. 10% NaOH

Soon discolorizes to natural straw yellow urine color, gradually attained same reddish tint and brick red ppt. of Cu_2O as No. IV.

No. IV.

4 cc. urine

4 cc. sol. A

 $\frac{1}{3}$ sol. 10% NaOH

$\frac{1}{2}$ volume for
boil test.

Readily assumes red or reddish brown color of colloidal copper oxide (Cu_2O) which gradually shows brownish or brown red ppt. of the Cu_2O . This reaction is very sensitive.

The quantities can be matched by a diluted N/10 iodine sol. empirically standardized.

A FORM OF NEURASTHENIA DUE TO HYPOADRENIA.¹

BY

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To give a medley of symptoms a name, without knowledge of causes for the conditions observed or even their nature, is a frequent occurrence in the history of the development of medicine.

To acquire an improved understanding of the underlying previously concealed or misunderstood processes giving rise to the symptoms, to associate these causes with the symptoms which they produce, and to assign to their proper places and relations the factors thus disclosed has been a constant process in the progress of knowledge.

This process often leads to the destruction of the original conception, to the separation of the symptoms which are its com-

ponent parts by placing them apart in relation to their etiology.

Neurasthenia is a structure of the imagination, highly embellished with additions that have been made from time to time by many individuals, until it has become a huge edifice of which the characteristic features are weakness, lack of endurance of mind and muscle, and all the possible results of that weakness in its effects on internal organs, and all the possible complications that follow the bodily and intellectual inactivity and inhibitions incidentally accompanying it.

For several years past this structure has been gradually reduced in size and importance. Symptom after symptom has been detached from this vaguely conceived figment of the collective medical imagination and placed where it might belong, as definite causes for their existence have been better understood, until now it is being completely demolished, having passed its period of usefulness as an hypothesis upon which to hang temporary groups of symptoms, to base plans for treatment, to satisfy patients who are not content with the diseases which fall to their lot unless they bear authoritatively derived names.

Twenty years ago the name, neurasthenia, was satisfactory to general practitioners and to neurologists, the disease being characterized by weakness of the muscles, nerves and the mind.

A disease in which this weakness was extreme, and usually fatal in from a few weeks to ten years was described by Addison in 1855, and was found to be due to partial destruction of the suprarenal glands.

But besides Addison's disease, there are many degrees of insufficiency of these glands, and we are now beginning to comprehend that many symptoms long observed

¹ See *Archives of Diagnosis*, Nov., 1915.

heretofore are due to lesions thereof, causing reduction in the quantity of adrenal secretion and hence hypoadrenia.

As the writer has said previously¹, the term neurasthenia amounts to nothing more than a convenient cloak for failure to investigate a case sufficiently, and in speaking of hypoadrenia as a cause of neurasthenia it is desired to call attention to the parallel existing between what has been called neurasthenia and the present conception of hypoadrenia.

Various authors have given the following as some of the symptoms of neurasthenia: failing strength, prostration after exertion, cold extremities, anemia, constipation, loss of control of attention, weakness of memory, weak will power, inability to perform mental work, incapacity of decision, abdominal throbbing from pulsating aorta.

Compare the now well-known symptoms of hypoadrenia: asthenia, sensitiveness to cold and cold extremities, hypotension, weak cardiac action and pulse, anorexia, anemia, slow metabolism, constipation and sometimes psychasthenia, as well as others which appeared in the cases reported herewith.

Hypoadrenia may result from the wasting of old age, the toxins of the infectious diseases, hemorrhages into the substance of the gland due to high blood-pressure, or perhaps from exhaustion by long standing emotions.

So that neurasthenia, we may realize, is hypoadrenia.

We know something of its pathology, but no one ever knew of a satisfactory pathology of neurasthenia. The symptoms of hypoadrenia stand out clearly, which never could be said of neurasthenia;

and armed with this more definite knowledge, we can formulate and carry out better ideas for its treatment.

An instructive case is that of a mechanic 57 years old, reported elsewhere², whose history showed malaria as a cause of his adrenal deficiency, and whose subsequent symptoms might easily have led to a diagnosis of neurasthenia. He felt unable to work because he was weak and dizzy, he had that throbbing in the abdomen which has been mentioned as a symptom of neurasthenia, and asthenia was present in marked degree. But he also had a slight tremor of hands and face, a hint of von Graefe's sign and hypotension, his systolic pressure being 108. It was clear that hypoadrenia was the cause of his trouble, and adrenal substance cured him in two weeks.

A still more interesting example was an official in a responsible position whose mental depression, asthenia, languor, flabby muscles, feeble heart and incapacity of decision made a very good picture of neurasthenia, and he feared dementia. There was some tremor, hypotension was evident, systolic pressure being 100 at forty years of age.

Adrenal therapy improved him so that he was able to accomplish the work that he formerly could not do. Later the dose was reduced until he was able to go without it.

A woman who had a postpuerperal psychosis, attacks of melancholy, had lost interest in life, food had no taste, was in despair because she wished to cease child-bearing. This might have been called neurasthenia, but there was brownpigmentation of the skin and a systolic pressure of 112 which soon fell to 90. At first 4 grains daily of adrenal substance was given without any visible ef-

¹Arch. Diag. 1909. Dif. Diag. Neurasthenia.

²J. A. M. A., 1913, Nov. 9.

fect. The dose being doubled, however, improvement was rapid, and afterward the dose was successfully reduced. This result confirmed the diagnosis of hypoadrenia.

A professor of economics had headaches for six years, worse after using eyes, had soreness over whole body, especially the neck, dull pain over sacrum, and a tired voice. Oculists had failed to relieve him. He felt disinclined to take exercise, a change from his former habits, and he had no sexual desire. A diagnosis of neurasthenia would have seemed appropriate. He had scarlet fever in his youth, and an attack of the grippe had greatly aggravated his symptoms, and these toxic sources of adrenal weakness suggested adrenal therapy, tho hypotension was very moderate, systolic pressure being 114. He improved on small doses, and was afterward able to do effective work if it was limited to four hours a day. He later recovered completely.

A man of 40 who was soon to be married feared he was impotent, and worrying about this had run him down until he was in despair. He was depressed and was quickly fatigued, and was found to have a pigmented abdomen and a systolic pressure of 102. He was given adrenal substance and fully recovered as a result of this and appropriate psychotherapy to prevent the material stress to which he had subjected himself.

These cases were all referred to me by fellow practitioners as neurasthenia previous to about three years ago. Since then a number of others have been brought me, but to relate them would merely be a repetition of the facts. In spite of the rapid recovery of some cases, it is not wise to diagnose hypoadrenia therapeutically, for some patients do not improve in long periods. To give adrenal substance for long is unsafe as

overstimulation of negative functions and internal secretions might ensue even if no direct ill effects occurred. Moreover, valuable time would be lost were the patients' neurasthenic state due to another condition than hypoadrenia. The diagnostic criteria were stated as follows in my papers to American Medical Association in 1913.

Some cases do not do as well as these which have been mentioned, however, and an instance is seen in an ethnologist 30 years of age, who felt that his mind was shadowy and nothing seemed real.

He had intestinal flatulence, especially after worrying, sometimes foul tongue, indigestion, dizziness and morning headaches from autointoxication, constipation and sudden insomnia. A temporary gain was soon lost after taking cold. His systolic pressure was only 102, so he was given adrenal substance, in small doses at first. There being no rise of blood-pressure the dose was gradually increased until he was taking 27 grains a day, with varying pressure and still feeling discomfort. His improvement was slight, but he worried less and the treatment was continued, in the hope that he would learn to tax himself less in his work, and that thus his functional adequacy would increase. This patient fully recovered after a year when calcium was increased in his diet.

The fact that some instances of hypoadrenia are commencing Addison's disease, and are destined to terminate fatally when the adrenal glands are destroyed makes it conspicuously necessary to have a clear knowledge of the real conditions that cause the symptoms, as a diagnosis of neurasthenia under such circumstances would be unfortunate.

Thus the daughter of a Boston physician

began to tire easily at study and at play. A long rest was prescribed and she took a long trip to Europe, but the asthenia increased and finally became extreme, the bronzing of the skin decided and the pupils dilated. A diagnosis of extreme hypoadrenalism was made, adrenal substance was given by the mouth and under the skin, but the patient died a week after the treatment was commenced. At autopsy the cortex of the adrenal glands was found to be nearly all destroyed, only part of the medulla and the capsule being left.

Another case was that of a married woman of 34 who had a nervous breakdown from overwork. She lost weight, had anemia and asthenia and also feeble heart. Dilatation of the stomach, sunken eyes, pale mucous membrane and râles in the chest suggested tuberculosis. There was brown pigmentation of the skin and a systolic pressure of 86. She died a few weeks later, and as necropsy was refused it is impossible to say whether the failure of adrenal secretion which caused her death was due to tuberculosis or was a simple atrophy as in the preceding case.

DIAGNOSIS DIFFERENTIAL AND PSYCHIC.

From conditions of physical causation characterized by great fatigue on least exertion and feeble circulation the diagnosis would of course be made by the current procedures of clinical medicine, upon which I need not enlarge here.

PSYCHASTHENIA.

But the diagnosis from certain neurotic states requires specification. Cases of the type I have described are often labeled psychasthenics because of their feeling of inadequacy, the most prominent feature

in psychasthenia. But the genesis of this feeling in hypoadrenalism is a real physical tire occurring only during exertion, while the genesis of the inadequate feeling in psychasthenia is from a besetment or apprehension; and it always passes off while the patient is actively exerting himself with muscles or mind. If there is any feeling of panic because of the dread of his incapacity in a hypoadrenal patient, this is a purely secondary and normal reaction to a physical fact; and it is very easily dealt with by enlightenment, as my cases illustrate. Furthermore, psychasthenics present a vast series of intellectual, emotional and often motorial symptoms, the combination of which is characteristic and the source of which can be detected by analysis of the psyche.

HYSTERIA AND NOSOPHOBIA AND HYPOCHONDRIASIS.

The seeming exhaustion anesthesia so often found as a result of a patient's belief in the malfunctioning of a stomach, heart, intestine, limb or brain, is a phenomenon of mental attitude induced in the same way as is the case in the little child who suddenly becomes tired when his work or play is no longer to his liking. It is merely a lack of the toughening of psychological fibre necessary to social welfare. It is a phenomenon induced by suggestion, and its name is hysteria. The real physical exhaustion which may occur after long continuance of hysterical attitudes like this is secondary to the depressing emotions sometimes induced in the patient's mind.¹

From melancholia the incapacity of hypoadrenalism is distinguished by the absence

¹ See author's *Hysteria and Pseudohysteria*, *Am. Jour. Med. Sc.*, 1911.

of the retardation of thought and movement always present in the true melancholic, in whom furthermore, the responsiveness increases in speed and effectiveness as the day goes on and when the stimulæ are augmented and longer continued. Whereas in hypoadrenalism the patient is at his best early in the day and the more work he does the worse he becomes.

Concerning neurasthenia, it should be evident that we should cease to recognize any such nosological rubric and should regard the term merely as a convenient cloak for failure to sufficiently investigate a case, and place all the patients who were formerly so diagnosed into categories corresponding to the etiological factor which has determined their condition.

My object has been to show by these instances that when we are confronted with patients who have great asthenia, lack of concentration, and more or less of the long list of symptoms heretofore assigned to neurasthenia, we must not be content to stop with the latter as a diagnosis. If, in addition, there are low blood-pressure, subnormal temperature, pigmentary changes, hypoadrenia may be the cause of the depression.

I feel sure that this syndrome is much more frequent than has been suspected; for in a special neurological practice, by no means large, I have already seen a score of such cases.

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SCIENTIFIC PREPAREDNESS.

BY

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The purpose of this paper is to outline a new realm of study and practice that is destined to attract a great deal of attention. Today it is largely occupied by irregulars and is a confusional realm of moral theories and quackish efforts that lead nowhere and are without results.

Today the sale of spirits is prohibited by law in twenty-four different states of the Union and in at least ten thousand or more towns and villages of the United States.

Evidently, prohibition and restrictive legal measures will spread over the country and the sale of spirits as a beverage will be forbidden by law, custom and public sentiment. What will become of the armies of drinking men and women and drug takers who are dependent on these means? The theorists and reformers assume that a large percentage will permanently recover, simply from the absence and difficulty of securing the poisons.

Experience shows that a certain percentage may become abstainers from this measure but there is unmistakable evidence that this is not removing the actual causes, which impel men to drink. The armies of neurotics and worn-out men and women now dependent on spirits and drugs, will continue to suffer in unknown degrees and forms that call for help. They will comprise a class of degenerates appealing to science for relief beyond any present conception. Today, there are vast armies of drink and drug takers who are in chronic stages, with very little hope of permanent restoration. Among them are criminals,

epileptics, insane and idiotic and many other classes of defectives that appeal to both science and charity for help. Innumerable charities, hospitals and homes with an army of quacks, are trying to meet this great demand. Temperance crusaders are urging religion as a remedy and societies of all kinds are appealing to the moral side and trying to overcome the drink impulse by educational and sociological means. The churches have entered this field as a part of religious work and most elaborate means of sermons, tracts and other literature are poured out as a panacea for this great evil. Thru it all, there is an increasing consciousness of peril and danger from this class and prohibition is only an expression of this cosmic alarm that pervades all classes.

Alcohol has been studied in the laboratories and its effects on cell and tissue demonstrate it as that of a sedative. This explains its attractiveness and a growing literature in this direction is revolutionizing the theories of the past and suggesting a new world of facts at present unknown. This among other great evils, has always been studied from the moral side and has become encrusted with theories unverifiable and opinions which have come down unquestioned from the past. Today science demands the reason for the existence of these scourges of the race and the causes which perpetuate them. Such a study has revealed the causes and enabled us to stamp out yellow fever, typhoid fever and many other similar diseases. Also the means of prevention and cure. Discoveries of physical forces and sources of degeneration, have made it clear that the evils which we deplore are all preventable, not upon theories but from actual knowledge of the facts and the laws which govern them. The drink and drug takers of today are curable to an

unknown degree but this must be from the use of means and actually devised measures, that will remove the causes and assist nature in restoration. Farm colonies to house these poor victims and treat them in the open air by work, physical and mental remedies all applied with scientific skill have already proven their practical character. The jails and workhouses patterned after ideals of the centuries that have gone by, are failures. Punishment in the sense of deterring victims by fear produces the very opposite effects. Commercially, and scientifically, there is an increasing recognition of the impairment of alcohol and drug users, and their incapacity to do normal work and live normal lives. This without question results in diminished longevity, increased disease and defective descendants. The practical question is how to take care of these people and prevent them from becoming worse and diminish the burdens which they entail on the community. This comprises one of the great problems which is unsolved today. Beyond this army of incurables, there is another sphere, a practical recruiting ground, where victims are enlisted, trained and finally turned out as inebriates and drug takers. It is from the ranks of this class that the incurables of the future are growing up. This can be stated in positive terms, resembling the growth of plants. The soil is prepared, the seed is sown and the conditions are favorable and the plant follows. It is asserted that half a million persons in this country, belong to the class of drink and drug takers. They all had a beginning in the past. Favorable conditions developed them and they have grown and have been cultivated with absolute certainty. There is no accident or chance in this. It is the

operation of physical and mental laws. The epidemic of typhoid fever is traced to the germs scattered on the banks of a reservoir filtering into the water, producing positive results. Neglect of proper sanitary measures results in disease with about the same certainty that contagious germs reproduce themselves. It is the same law of cause and effect, which is just beginning to be recognized. It is asserted that one person in every five families in the country finds relief in spirits and drugs and that one in ten of all persons over twenty uses spirits. If these statements are approximately true there is an enormous number of persons in peril. The exhaustion following our peculiar civilization in all ranks and conditions of society prepares the ground for some narcotic that will bring relief, and practically this is true. The distracted, exhausted and debilitated men and women from all sorts of causes and conditions, comprise a very large class that depend on physicians for help. These are the persons who use alcohol and drugs, often secretly and never to so-called excess. They use it at home as a medicine,—at meals and in the club rooms for social purposes and are often so-called temperance people, who pride themselves on their ability to stop when they please. Many such persons are very actively engaged in all business circles and are recognized as leaders. Thinking persons of this class realize the danger of the use of spirits and would like to escape and become abstainers, but do not know how. Their family physician is rarely consulted, because of the implication of weakness, which a desire of this kind would indicate. Institutions and specialists of this class are shunned for the same reason. When they realize the dan-

ger, all sorts of efforts, such as visiting health resorts, travel to different countries, change of surroundings with the hope that they can escape or stop themselves. This goes on for years or until death from some intercurrent disease follows. The real causes, alcohol and drugs, have been concealed for want of proper advice. From this army of moderate drinkers, there is recruited with absolute certainty, the worn-out alcoholics and inebriates. The saloon, the club-house and the ease in which spirits can be procured are all favorable conditions, but are not the real causes. Something farther back, some unknown laws, both physical and psychical have produced degenerative influences, that have culminated in the deplorable conditions afterwards. Thoughtful men are asking the question today: "Why do men seek spirits and drugs for relief?" "Why do men drink, particularly cultured men in all the professions, men who realize the damaging effects and who are fully aware of the teachings of modern science; men who condemn the use of spirits in others and yet claim to be exceptions themselves?" There is a field for new discoveries here. Already many facts are recognized. Almost every physician in active practice is able to trace the early causes of these neurotics to exact conditions, such as faults of nutrition, starvation and poisoning, which are as preventable as any other known causes, injuries, shocks, both physical and mental, precede the drink craze of after years. Hereditary influences offer a most complex field of causes that are not yet studied but they suggest conditions and favorable influences that culminate in the future with absolute certainty. Here is practically an unknown country of facts, which have never

been collected or studied that are governed by exact laws.

A research foundation has been established at Hartford, Conn., to colate and study these facts and trace them to some great underlying cause that is unknown today. The voluminous, confusing literature of why men drink, gives no scientific data on which to base absolute conclusions, for the reason, that there has been no exact studies above theories and opinions. There has been no grouping of a sufficiently large number of histories to indicate such laws and forces and to point out certain conditions which produce exact results. It is assumed that such a foundation work will lift the whole subject out of the realm of theory, and indicate causes which could be avoided if known of the drink and drug evils. The magnitude of the subject calls for such a study. Now that the laboratories have proven conclusively that the previous theories concerning the effects of alcohol on cell and tissue were wrong and instead of a stimulant it is a narcotic and the fascination of its use comes from this fact, a larger field of causes back of spirits must be explored. Such a work will be higher up than drug treatment for present conditions. It will attempt to determine the causes and suggest how they can be removed. It will offer counsel to innumerable men and women, how to help themselves, and with the aid of the family physician how to obtain relief from conditions that are increasingly perilous. This is literally lifting the subject above the plane of sentiment and theory and is an effort to determine the means and measures that can be used in prevention and restoration. It will really open a new field for medical practice and enable physicians to wisely counsel their patrons as to the

best methods of help and relief. Such a work is to be endowed and become permanent and will meet a want that is just beginning to be realized, which has been supplied by irregulars and charlatans in the past. It is evident that prohibition of the sale of spirits as a beverage is going to be a great topic of personal discussion and settlement at the polls. Medical men are destined to be the great leaders, not in the promotion of any one theory but the scientific study of alcohol and its effects and the causes which produce it in every community of the country. It is also evident that the subject is thoroly scientific in the sense of comprising an array of facts which can be known and grouped and the laws which govern them and from such a study preventive measures can be suggested that are unknown at present. Discoveries of the action of alcohol on cell and tissue are just beginning and the revolutions their conclusions indicate, are only intimations of the larger study of the subject which awaits future research work. A moment's reflection will bring to view the hopeless and helpless army of chronic spirit and drug takers, who frequent the physician's office and are seen in the dispensaries, hospitals and alms-houses and the still larger army of so-called moderate drinkers and drug takers who are more or less concealed and who call on physicians for help ascribing their troubles to other causes than the real ones, that are today practically unknown, unstudied in any scientific way. Scientific preparedness must reach out and include this new class of people and sufferers who need help as much as any fever stricken cases, but it must be along different lines and scientific study must indicate what these will be.



Treatment of 102 Carriers of Amebic Dysentery With Emetine Bismuth Iodide.

—Drs. Waddell, Banks and King (*Lancet*, July 21, 1917) report that the form of the drug used was a keratin-coated tabloid, each tabloid contained 1 grain of emetine bismuth iodide. As a rule the daily dose consisting of three grains was given to each man after the mid-day meal. The time of the daily dose was decided by the men after trials of various hours. They were less disturbed by taking the dose at mid-day than at any other time. After having their dose at 1 p. m. all laid down and rested. During the earlier part of the day they were allowed out within the lines, and having been put into blue, they were easily kept under observation.

The course of treatment extended over 12 days until 36 grains of emetine bismuth iodide had been taken. The diet adopted comprised mainly milk, eggs, fish, puddings, mutton and cabbage, steamed and sieved. All were either purged or they vomited, or both. Of real tolerance to the drug there was none. Dobell has shown that emetine hydrochloride fails to cure about two-thirds of the cases. It seems to the authors that while emetine bismuth iodide is a much more efficient drug, nevertheless, at any rate in the form used at Barton, it may fail to control about 20 to 25 per cent. of *entameba histolytica* infections. Again, a man who has relapsed after emetine hydrochloride injections is very seldom cured by a further course of the drug.

The definite failure to cure 19 out of 102 cases may be due in part to the form of the drug employed. It is advisable to keep the patients under observation not less than 14 days after treatment, and to examine them not less than four times during that period if relapses are to be detected.

Vaccine Therapy in the Treatment of Gunshot Wounds.

—Swan (*Lancet*, London, Nov., 1916), holds that every septic wound arriving should receive an initial dose of a mixed polyvalent vaccine of the proteus and streptococcus until the true bacteriology of the individual wound can be worked out and before any surgical measure, other than freely incising the wound to secure adequate drainage, is adopted. A mixed infection containing both proteus and streptococcus will be found in almost all cases. No operation should be performed without the knowledge of the interior of the wound afforded by a thoro radiographic examination, particularly as regards bone injury and the pressure of metal fragments, and it is just this time that is so valuable in an attempt to immunize patients against the proteus and streptococcal infection, in the author's opinion should be done in all cases.

The greatest value of vaccine therapy is in the treatment of complicated septic fractures of long bones and of fractures which open into joint cavities. The routine practice is followed of giving a preliminary dose of polyvalent vaccine (proteus and mixed streptococci) and then after two or three days freely open the wound to secure adequate drainage, approximating the fragments and only removing those fragments which are undoubtedly completely separated, at the same time taking advantage of the opening of the wound to obtain further bacteriological examination. Extension apparatus of various types or splints suitable to the individual fracture are applied, but should the resulting position of the fragments prove on further radiographic examination to be unsatisfactory, Swan has no hesitation, after giving the patient a few doses of specific vaccine, in securing the

bone fragments in apposition by means of silver wire or even bone plates in the presence of sepsis, and can now look back on a series of cases in which not only have limbs been saved, but bones in good alignment and functional use.

Further the result as regards sinus formation and necrosis of fragments of bone in the seat of the fracture has been more appreciably lessened in those cases in which vaccines have been used than those in which exactly similar surgical measures were employed without the assistance of vaccines.

The Intravenous Use of Calcium Solutions as an Aid in the Treatment of Tuberculosis.—Beasley states (*N. Y. Med. Journal*, July 21, 1917), the subject of calcium deficiency and its relation to tuberculosis has been commented upon by many observers, and the deposit of calcium in healed or healing tuberculous areas in the lungs stands without parallel in pathology. In no other disease manifestation do we find that the organism utilizes calcium so uniformly in walling off disease areas as in tuberculosis of the lungs. All are familiar with the frequency and abundance of calcium deposits in healed tuberculosis of the lungs, this being in contrast with the scantiness of these deposits in the lungs of those who succumb to the disease.

The infrequency of tuberculosis among lime workers has been the subject of much comment by many observers, and for many decades various preparations of lime have been used and recommended in the treatment of this disease.

Most of the effort to supply tuberculosis patients with calcium has been by oral administration. Sooner or later the alkalinity of this salt impairs gastric digestion and again we are not assured that a sufficient amount of the calcium reaches the blood to be of value.

It has been found that solutions of calcium chloride can be administered intravenously over long periods of time without any apparent harmful results. In administering calcium intravenously, the body weight of the patient must be taken into consideration in the adjustment of the dose. It has been found advisable to begin with a dose of one grain, gradually increasing

until a maximum dose of six grains has been given. At this point—the dose is slowly decreased as the coagulation time shortens, and that amount is given which will be found necessary to maintain the coagulation time at normal or slightly below normal.

The results following this treatment have in the majority of the curable cases been surprisingly good.

Sodium Cacodylate and its Antiluetic Value.—William F. Bernart is of the opinion (*Medical Standard*) that this drug in large doses is of considerable value in the treatment of syphilis, but by no means the equal of newer remedies. It has an inhibitory action on the spirochetes, but this action is slight even in large doses. It can be classed as a valuable adjuvant in the treatment of syphilis, and can be administered in moderate doses to patients who show idiosyncrasies to the newer arsenicals and along with a mercurial medication it assists in the production of better results. Its only objection is the production of a garlic-tainted breath.

Neuralgia of the Womb.—Wintergreen oil, drachm i; sterilized oil, drachm iii. To be applied to the lower part of the abdomen. Cover with cotton wool and protective.—*Medical Press and Circular*, (July, 1917).

Treatment of Cholera Infantum.—*The Charlotte Medical Journal* proposes the following treatment for cholera infantum: 1. Empty the stomach and intestines by stomach washing and rectal irrigation, with a large dose of castor oil. 2. Neutralize the effect of the poison upon the heart and nervous system, by morphine 1-50 and atropine 1-600 hypodermically for a child one year old, repeated every hour until effect. 3. Supply fluid to the blood. This is done by hypodermoclysis, $\frac{1}{2}$ pint of saline being given every 12 hours into the back or thighs. 4. Reduce temperature. Cold baths every two or three hours if necessary; ice cap; brandy, camphor and ether as stimulants, if needed.



The X-Ray and Its Effect on the Thyroid Gland.—Many patients with so-called "shell-shock" and "soldier's heart" are suffering from hyperthyroidism. When there is reasonable ground to believe that the thyroid is overactive it should be treated by X-rays. In some cases the hyperthyroidism seems to be part of what has been called "defensive reaction of the subconscious"—i. e., of a symptom complex, which makes the person unwilling to go again into dangerous surroundings. Such cases are unlikely to be benefited unless they are assured that a cure will not mean a return to the front.

It may be said that the therapeutic effects of X-rays upon the thyroid gland are well known, and that the dosage can be graduated to produce any desired effect on the quantity of its secretion. It should be clearly understood that this diminution, and, if necessary, complete suppression can be carried out with as much certainty as a surgical operation for partial ablation or total removal of the gland. When the secretion is vitiated as well as increased, partial surgical removal may fail to relieve. X-rays may fail for the same reason, altho they tend in small doses to regulate as well as to depress. In short some cases cannot be cured by radiation, unless it be pushed to total and permanent suppression—the equivalent of the complete operation.

Sufficient evidence has accumulated to make it worth a trial in obstinate cases of ovarian disorders.

With regard to other ductless glands, X-ray treatment is in its infancy, but progress will doubtless be made in the future.

Organootherapy of Menstrual Disorders.—Novak in a comprehensive discus-

sion in *Medicine & Surgery*, Aug., 1917, says that the female generative apparatus is more or less closely linked up with a number of endocrin glands. Most important is the ovary. Other ductless glands which influence the reproductive activities are the thyroid, the suprarenals, the thymus and the pineal body. The most satisfactory of all the organic extracts in the treatment of menstrual disorders is thyroid extract. From a theoretical point of view the influence of thyroid should be less direct and less potent in menstrual disorders than ovarian substances. These considerations are more than counterbalanced by the greater reliability of thyroid preparations, by our more precise knowledge of their pharmacodynamics and by the greater potency of their action in general. A great advantage in thyroid medication is the fact that administration of the extract by mouth, most commonly in the form of the well-known tablets, yields eminently satisfactory results.

Some physicians have used ovarian substances with marked success in the treatment of primary dysmenorrhea.

If ovarian extract is to be employed in cases of apparent underdevelopment of the generative apparatus, the extract made from the entire ovary would seem preferable to that of corpus luteum. It has been fairly well established that the hormone which is responsible for the occurrence of menstruation is formed by the corpus luteum.

An important guide to the action of thyroid extract is its effect upon body weight, which is practically always diminished. This, as is well known, is the result of a stimulating effect upon the oxidation processes in the body. It is seldom advisable for a patient to lose weight at a faster rate than two or three pounds a week. Instead

of discontinuing the thyroid abruptly, it is wise to diminish the dosage gradually and to keep up small doses for a considerable period of time.

Treatment of Pituitary Disorders.—

Cobb maintains (*Medical Press*, Aug. 16, 1916), as pituitary extract raises the arterial tension it (or any preparation containing it) should be carefully avoided in all states indicating hypertension. It should be administered with caution over long periods, and frequent sphygmomanometric readings taken to control any undue rise in blood pressure. The author has known it to work wonders in some neurasthenic conditions, likewise in states of weakness following long continued strain, in impotence and such disorders. Again, in delayed convalescence, in persistent low blood pressure, in depressive states and the like, a course of pituitary extract wisely controlled will frequently be found to be invaluable.

The requisite dose varies enormously and so wide is the range that it appears probable that some at least of the failures are due to the dose being unsuitable. In speaking of the dosage required in some of these cases, Cushing emphasizes the vast range of dose which is effectual in different cases. Thus one boy exhibiting the signs of hypopituitarism in a marked manner underwent a "complete mental, moral and physical awakening" by taking 18 grains of whole gland preparation daily. In other cases the dose required is often times much larger. It is wise to progress slowly and to endeavor to ascertain the dosage required in each individual case, as well as the reaction to the extract.

It is often only possible to watch carefully the progress made under treatment; at the same time looking for any symptoms the amelioration of which may justifiably be claimed to be due to the drug. In this manner there is little risk in employing pituitary extract and a prospect of helping patients who may perhaps be helped by no other method.

The Defective Child and the Internal Secretions.—

Harrower in *Southern Cali-*

fornia Practitioner (July, 1917), calls attention to the fact that in the past few years considerable interest has been aroused in the subject of endocrinology by the study of defective children. It is surprising how many of the stigmata which cause us to place children in this category are connected with abnormal endocrine function and, also, how frequently on investigating their antecedents we uncover a more or less well marked endocrine disorder in the parents or grandparents which properly may be regarded as a part of the cause of these unfortunate conditions in their offspring.

"Any disease capable of injuring the ductless glands sufficiently to inhibit their functional activity impairs correspondingly the development and functional activity of the brain, by reducing the supply of secretions this organ requires to carry on these physiological processes.

"The main underlying cause of defective mentality in both parent and offspring is inherited deficient activity of the ductless glands.

"We should start a campaign having in view the salvation of these unfortunate infants by supplying thru the intermediary of their defective mothers, and, after birth, thru their food, the secretions they lack to complete their development.

"In the majority of functional cases of feeble-minded and backward children met in current practice, the predominating pathogenic factor is hypothyroidism, tho deficiency of other internal secretions is also discernible in most instances.

"On the whole, the intimate relationship between the ductless glands and everything that concerns reproduction, the greater relative size of these organs in the product of conception, and the teachings of practical experience in organotherapy, all tend to indicate that whenever the father or mother is a mental defective, or both parents show any sign of deficient activity of one or more ductless glands, or are mental defectives, organotherapy should be instituted as soon as pregnancy is recognized.

"The mental and physical status of all pregnant women as regards the functional efficiency of their ductless glands, which may be determined by the stigmata of deficiency of these organs, should invariably be established. If found deficient, organo-

therapy should be used to protect them against renal disorders and convulsions thru toxemia, and also their offspring against imperfect development and mental deficiency."

The author thinks that the foregoing statements are deserving of the closest attention, and that the principle so clearly enunciated applies to all deficient or defective and not merely to those in which the mental element predominates.

Hyperthyroidism.—Watson in a recent issue of *Medical Herald* declares that too often toxic goiter is regarded as a disease of the thyroid gland alone, while in reality all the glands of internal secretion are more or less involved. He found glycosuria in eighty-five per cent. of the severe cases of hyperthyroidism. Doctor Sajous was the first to emphasize the close relationship and interaction existing between the ductless glands in health and disease.

Rautmann, who has recently reported the findings from autopsies on patients dying of exophthalmic goiter, states that an enlarged thymus very frequently accompanies hyperthyroidism; the suprarenals and ovaries are involved in a majority of cases; the hypophysis, parathyroids and islands of Langerhans are less frequently affected. He states further, that the changes in the thyroid, parathyroid, thymus and hypophysis are of a hypertrophic, hyperplastic nature, while the changes observed in the suprarenals and ovaries are atrophic.

Organotherapy has an established place in the treatment of hyperthyroidism. It is necessary to make a careful study and examination of each patient to determine which ductless glands are contributing to the symptoms, and if their action is one of hypofunction or hyperfunction. If the condition is found to be one of decreased function, glandular extracts should be administered; if it is a disturbance of hypersecretion, a nucleoprotein serum may be given in selected cases.

In selected cases hyperthyroidism can be relieved by means of injections of concentrated solutions of quinine and urea into the thyroid.

The method is recommended only to relieve hyperthyroidism and not to remove

the goiter. It is sometimes true that in small toxic and atoxic goiters the inflammatory reaction following the injection is sufficient to cause the disappearance of the tumor; but the process is slow, and when the injection is used for this purpose alone, the results are liable to be disappointing.

The greatest field of usefulness for the injection will be found in those cases of beginning hyperthyroidism not severe enough to justify operative treatment, and as a preparatory measure to partial thyroidectomy in chronic cases of toxic goiter too ill to warrant any form of immediate operative procedure.

Treatment of Hay Fever and Asthma by Pituitrin and Epinephrin.—Zueblin

says in *Medical Record* (July 7, 1917) the symptoms emanating from the respiratory tract are probably not the only ones present; that, at least as shown in the cases studied by the author, there may be found definite signs of a cardiovascular deficiency, cardiac dilatation, weak heart sounds, abnormal blood pressure findings, vasomotor weakness, associated with indicanuria of nutritional or intestinal origin, which functional disturbances may be favoring factors for the manifestations resulting from the pollen irritation. Somewhere, somehow, the pollen floating in the air must reach the mucous membrane. Admitted the lack of a vasomotor tonus, a low circulation, and weakened heart condition, the possibilities are that the irritation of the pollen is more apt to cause the distressing clinical symptoms.

From the therapeutic standpoint pituitrin administered in appropriate doses may remove the cardiovascular depression and in some instances cure, or at least alleviate, the clinical symptoms. The making of such a statement does not imply that pituitrin medication is the only substance to be used in hay fever cases, nor does it mean that the pollen vaccination is out of place. As said before, the vaccination treatment has its usefulness and is apt to secure good results. From the clinical standpoint the attendant signs of vasomotor and cardiac weakness ought to be considered in the outline of treatment for hay fever cases.

Admitting that the posterior part of the pituitary body plays a more important part in human physiology than generally supposed, especially with reference to the vagus nerve, it is at least probable that by the proper therapeutic use of pituitrin we are able to help the patient and secure him better protection from the tedious symptoms attributed to hay fever.



THE NECESSITY FOR TRAINING IN MILITARY MEDICINE.

To the Editor
AMERICAN MEDICINE,
New York City.

Your editorial, Medical Mobilization, in the February number of AMERICAN MEDICINE was of great interest and pleasure to read.

I am delighted to know that at least one of our leading medical journals and a few members of the profession are beginning to realize the great importance and necessity of a large and thoroly equipped, trained and efficient medical branch of the Army and Navy.

Medicine and surgery in the field on the battle line under the most primitive circumstances and trying conditions, and surgery at home in a base hospital with every convenience and assistance present are two entirely, separate and distinct phases.

The military physician has in war many things to discourage him. Not only has he to do the work ordinarily allotted to greater numbers of his profession in times of peace and during previous wars, but conditions having changed, the experience gained by the past, while valuable, has not entirely fitted him to cope with the problems of the present situation. New problems have arisen and increased difficulties are being encountered.

In the present European war for days at a time it was impossible to reach and even

render first aid to the countless wounded of even one battle who became easily and quickly infected, dying by the score.

The military surgeon is exposed to constant péril, is often wounded and in many instances killed. On all fronts, and in all of the armies, the loss of medical officers has far exceeded any previous expectations. The mortality is great, alarmingly great, especially in those countries where there was at the outbreak of the war, no medical mobilization.

Each day there comes reports of several deaths among the medical corps, but alas unlike the soldier, he cannot be so easily replaced. There are few enough doctors, and fewer surgeons; because of this, deplorable conditions exist in many of the European armies, conditions that result from previous lack of proper training and instruction and the inability to cope with the vast undertaking that of necessity has suddenly forced itself upon them.

Thousands die or pass out who can "tell no tales" and hundreds fortunately live without the knowledge that the lack of medical, surgical and military preparedness in the past is responsible for their life long disabilities.

To be able to meet the coming great strain and demands upon the medical man's service and aid to the country, complete and efficient mobilization by the medical associations of the entire profession for civil or military duty is desirable. Students in our medical colleges should be given thoro instructions in litter bearing and first aid work. Not of the "raise litter, lower litter" type, but of the real battle field principles that will teach them the part they must in reality be called upon to play.

A hospital corps sergeant who had served in the militia over seven years told me while on maneuvers during the past mobilization on the Mexican border "that he did not before know that his duties took him out onto the firing line."

Many conditions are yet to be remedied and overcome and a universal medico-military department encompassing within its scope all available members of the profession that they may more easily serve their country in time of war is by all means needed.

Respectfully yours,
E. KILBOURNE TULLIDGE, M. D.,
Assistant Surgeon, U. S. Navy.

THE ENLISTMENT OF PHYSICIANS IN THE MEDICAL SERVICES.

To the Editor

AMERICAN MEDICINE:

Having noticed once or twice in your recent issues your criticisms of the doctors because they have been slow in volunteering their services, I venture to suggest that a partial explanation, at least, may be found in the fact, *first*, that the war department at the very outset, and by implication if not otherwise, gave the older men of the profession to understand that they were not wanted, while they assiduously courted the favor of the younger men; *second*, that the services they were asked to perform were to be contributed—they were plainly told that these services were to be contributed, that no recompense was to be expected. The services were to be offered gratis. This, I admit, would not have deterred many, but for the fact that other salaried officials were being offered pay for a work involving little or no sacrifice. The doctor was plainly asked to contribute his services in this matter on the score of *patriotism*, but it was deemed equitable, I suppose, to see that the already salaried official received additional pay.

Thirdly, I have been informed, but hope the information is without basis, that definite salaries have been offered some of the younger men in the profession in this neighborhood in a clandestine manner, while to all inquiry, on the part of the older practitioners, concerning provision for the support of families, and for saving themselves from beggary should they live to return, either a stony silence is preserved, or one is met by this talk of patriotism!

Yours very truly,

MILLARD F. CUPP.

Metamora, Ind.

[We print the foregoing letter, not because we feel that our correspondent is correct in his conclusions, but because it is our policy to give our readers a hearing no matter whether their grievances are real or fancied. In the present instance we are certain that Doctor Cupp is very much mistaken, but it is entirely probable physicians in other communities entertain similar views, however erroneously, and if so, it is

not difficult to understand why some medical men have hesitated to offer their services.

Dr. Cupp also evidently has AMERICAN MEDICINE confused with some other journal, for we have never criticised physicians for failing to volunteer. On the contrary, we have on repeated occasions stated our conviction that the medical men of the country would not fail to meet any proper demand on their services].

EDITOR.



Treatment of Chronic Intestinal Indigestion in Children.—Rewalt in his interesting article in *Pediatrics* (July, 1917) says that the treatment of chronic intestinal indigestion in children will give splendid results, provided the physician has the earnest support and cooperation of the mother or nurse, and provided that the physician himself will take a proper interest in having his orders strictly obeyed. Any deviation from the strict regimen laid down will undo in twenty-four hours the work of a month.

The general management in these cases is important. Rewalt believes that the child should be kept in bed until his temperature is normal and remains so for three or four days. Then he might be allowed up, gradually increasing the time of his being up as improvement takes place. Whether the child is confined to bed or not, he should be obliged to take a nap of at least two hours daily. Regular exercise, such as walking in the open air, should be insisted on, being careful not to overtax the strength of the child. Proper clothing for the different seasons should be advised. Cool sleeping rooms, an oil massage at night and a cool sponge bath in the morning are valuable measures.

As improper food is the cause of intestinal indigestion, the most important factor in treatment is the placing of the child on a strict diet and keeping him there for a long period of time. The usual history of these cases will be that the children were allowed to eat solid food which they were unable to digest. In the majority of cases, the carbohydrates are at fault, in that they were given in excessive quantities. The most important thing to do is to place the child on a diet consisting of milk and scraped beef or beef juice. Four feedings a day may be given. Occasionally the milk must be skimmed for children who show a fat intolerance, or in very bad cases partial peptonization must be done for several weeks. If improvement takes

place after two or three weeks, the juice of an orange should be given once daily and a feeding of malted milk given in place of cow's milk. Barley or oatmeal gruel is then added to the milk. If the child shows an ability to digest this form of starch, cooked cereals may be added later. Next toast or stale bread may be given and, after two months, spinach, asparagus tips, stewed celery, boiled rice and plain macaroni are added. The animal broths, a soft boiled egg and the white meat of chicken are given, and together with the above-mentioned foods, should constitute the child's diet for six months. After this time, other foods may be cautiously allowed.

During the treatment the stools should be closely watched for undigested food particles. Not infrequently one is obliged to go back and start over again.

Occasionally a case will be seen where the patient has been taking cow's milk to the exclusion of other foods, or in too great a quantity. In a case of this type the management is, of necessity, different. All cow's milk should be discontinued, and the patient should be placed on a diet consisting of scraped beef or lamb, cooked cereals, one soft boiled egg daily, orange juice or apple sauce, and some vegetables, preferably spinach, asparagus, cauliflower and stewed celery. A little malted milk may be given. Resumption of taking cow's milk should be very gradual and in small quantities.

After all symptoms have disappeared, the normal diet should be resumed slowly.

Kerosene Oil in Diphtheria.—Clayton in a recent issue of the *British Medical Journal* gives an account of several extremely severe diphtheria cases successfully treated with coal oil (kerosene oil). Kerosene oil was administered internally in doses of 30 minims, thrice successively every 4 hours, then 10 minim doses three or four times daily until normal breathing was established, which occurred in 48 hours.

From the first dose breathing became easier, improving with each successive administration until it became tranquil. No untoward action was observed.

No one would ever think of administering kerosene internally, and would at once discard it for its mere taste, but we are pleased to learn from the author that this taste can be disguised by means of compound decoction of sarsaparilla. The author is of opinion that this remedy is likely to be of great value in conditions such as spasmodic croup, membranous croup, diphtheria and in many throat affections.

Kerosene oil is admittedly a strong antiseptic and very probably the cure is due to these antiseptic qualities, but whatever the reason may be, we must give this new method a further trial and research.

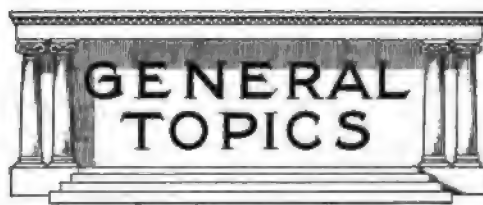
Treatment of Pellagra.—Barlow, in the August issue of the *W. Virginia Med. Jour.*, says that medicinal treatment has seemed to have but little, if any, effect upon the course of the dis-

ease. Regulation of diet has given the best results. Rest in bed and avoid sun rays.

The diet should be rich in animal protein. Meat broth, milk and eggs until the gastric symptoms have cleared up, then a carbohydrate free diet, consisting of fresh meat and vegetables.

Arsenic was highly recommended years ago but is found to be of no value at the present time. Sodium cacodylate grs. iii intramuscularly every third day for three doses then every second day for three days, then every other day until the patient is improved. Good results have been reported from the use of one per cent. ichthyol.

For the skin lesion use a soothing preparation like zinc oxide and lime solution.



Important Medical Position Vacant.—The Municipal Civil Service Commission of New York City announces an examination for Chief Medical Examiner for which applications will be open in a week or two. Full particulars and applications may be obtained at Room 1400 Municipal Building. The examination is open to all citizens of the United States but persons accepting appointment must thereafter reside in the State of New York. The compensation proposed is \$7,500 annually for full-time service, and candidates must be at least 30 years of age before the closing date for the receipt of applications.

The incumbent of this position will be in charge of the office of the Chief Medical Examiner of the City of New York and will perform the duties heretofore performed by the Coroners of the various boroughs. Candidates must have a degree from an approved institution, and present evidence of having done, in an official connection, at least ten years' work in the pathological laboratory of a recognized medical school, hospital, asylum or public morgue, or in other corresponding official capacity. They must have performed at least 1,000 autopsies. Special consideration will be given to administrative experience, preparation and presentation of evidence in court, and definite published contributions to the science of Legal Medicine. Copies of such publications should be submitted with the application.

The examination will consist of a practical test with a weight of 3, 75 per cent. required; an experience statement with a weight of 4, 70 per cent. required and an oral test with a weight of 3, 70 per cent. required. In the practical test, candidates will be required to perform an autopsy and to report in writing on

their findings. Candidates will appear before an examining board for the oral test as to their personal qualifications and fitness for the position including a thoro cross-examination.

This position is one of the most important in civil service in the medical and legal lines and the substantial salary and splendid opportunities offered should attract candidates of high standing in the medical profession.

Battlefield Casualties.—In the figures for the total British losses since the beginning of the war, says the *Military Surgeon* (Jan., 1916), recently given out by the War Office, the proportion of killed to wounded works out almost exactly in the ratio of one dead for each three wounded. This was for all the forces in all zones and classes of military activity. No differentiation for the casualties in trench warfare has as yet been given out officially, but certain reports indicate that in such warfare about one person is killed to each two wounded. These figures are interesting in comparison with the proportion of 1:4 which had been accepted before the war, and indicates that the kind of warfare which is being conducted bears directly on the amount and character of transportation and hospital facilities required in the zone of such warfare. Our accepted basis for estimates on the clearance of the battlefield will, like so many other standards, doubtless have to undergo material modification.

He Found Out.—The *Cleveland Plain Dealer* tells a yarn of a young man who had been reading medical literature and got to imagining all sorts of things were wrong with him. He went to a doctor who gave him some tablets, after telling him he had a bad case of "pernospera." The young man had to go to a public library before he could run down the word's definition. Finally he found it, as follows: "Pernospera—A blight that attacks the bean." That cured him.—*Med. Economist*.

Prophylaxis of Heat Stroke.—Amar (*Presse Médicale*, May 21, 1917) ascribes the form of heat stroke experienced most frequently by soldiers and workers in the fields to an intoxication by fatigue products, acting in conjunction with the heat of the sun. In subjects who are not performing an excess of muscular work, heat alone is incapable of causing death. Prophylaxis on this basis consists in insuring sufficient lung ventilation, oxygen destroying the toxic material and thus preventing heat stroke. For this purpose, the thorax and shoulders should be rendered as free as possible, light clothing of ample size being worn, without collar or tie. No burdens at the level of the kidneys should be permitted. At regular rest intervals, forced respirations should be practiced, with the head thrown back and mouth open. The subject should carry with him a mixture of water and

vinegar, which he should, on occasion use to moisten the face and snuff up into the nose in order to stimulate the respiratory reflexes.

Trachoma and the Army.—McMullen (Surgeon of U. S. Public Health Service), says in *Ohio Public Health Journal* (July, 1917), now that our country is engaged in raising a great army, it is our duty to prevent the admission to the army of recruits who may spread disease. The history of European wars shows that trachoma has been a grave menace to efficiency of the fighting forces, invaliding thousands of men and blinding large numbers of its victims. So great has been the prevalence in the armies that trachoma was at one time termed "military ophthalmia" and believed to be confined to soldiers. Various articles of their equipment were condemned as being the cause of the disease.

Despite the confusing and contradictory statements in connection with trachoma, the contagious character of this disease is unquestionable.

Some months since it was reported that an epidemic of trachoma was causing considerable anxiety in France, the disease having been brought to that country by African soldiers and laborers. In the army the disease was checked by the quick isolation of all victims and other drastic measures.

The diagnosis of trachoma is still based on clinical evidence, since the causal organism is as yet unknown. Diagnosis, therefore, is in many cases difficult. Trachoma is transmitted from the sick to the well by the secretion which is conveyed to the healthy eye by means of such infected articles as towels, handkerchiefs, bed linen, etc. Like most communicable diseases, trachoma spreads where people are crowded together, as in barracks, penal establishments, orphan asylums, etc. Armies originally get trachoma from the infected civil population in the areas from which recruits are accepted, and give it back to the people, generally with interest.

It is a surgical infection, and if anything like satisfactory or permanent results are to be obtained, it must be by properly and skillfully conducted surgical proceedings, and in many cases, hospital care.

The eyelids of all soldiers and applicants for enlistment should in every instance be everted, the examination to include the retrotarsal fold, and the condition of the membranes noted in a space on the blank form reserved for this purpose. If the eyelids are not smooth and pink, if there is any redness or secretion, especially in the retrotarsal fold, such cases should be segregated for examination by those trained in the diagnosis of trachoma. An applicant who is found to be suffering from trachoma should not be immediately rejected, but should be given treatment and his trachoma cured. He should then be examined again to determine whether he has resulting visual defects sufficient to cause his rejection.

American Medicine

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Medical Students Conserved.—It is indeed fortunate that President Wilson found a way to prevent the withdrawal of medical students from their studies. To have sacrificed deliberately the prospective physicians of the future would have been a serious error. Physicians cannot be trained in a short space of time; and to deplete medical schools for the sake of securing a few thousand more soldiers would have been a sacrifice absolutely unwarranted in spite of the urgent needs of the nation.

The present student population of medical colleges represents not merely the available supply of doctors for the United States for the next few years, but in all probability is to be the main source of medical attendants for the group of nations at present battling for the liberties of the world.

The number of medical schools, students and graduates in the United States has been persistently decreasing, while the standards for matriculation and graduation have been as steadily raised. In 1905 there were 162 medical colleges, 28,142 medical students and 5,600 graduates. In 1915 the medical colleges numbered 95, students 14,891 and graduates 3,462. In 1917 the total number of colleges had fallen to 79 while there were only 13,764 medical students and the graduates were only 3,051. This gradual decrease in the number of physicians in

the face of an increasing population does not in itself present a serious problem. The growth of hospital and dispensary systems, the socialization of public health departments, the gradual tendency to increased congestion in cities and the withdrawal of population from rural sections suggest adjustments that present no difficulty.

According to the London Letter in the *Journal American Medical Association* (September 8, 1917), the Central Medical War Committee after surveying England and Wales has expressed the opinion that no more physicians are available for commission in the Royal Army Medical Corps without endangering the supply of physicians for the treatment of the civil community. A similar condition is approaching in Australia and New Zealand.

The cry for medical assistance that has come from France and England indicates the serious results of a military policy which involved the neglect of the medical institutions of these countries and the practical cessation of medical productivity along academic lines.

Before the war, in the United Kingdom there was only one doctor to each 1,107 of the population, altho this varied considerably in different communities, London, for example, having just one to 945 of the population. While previous to hostili-

ties in Paris there was approximately one physician to each 767 of the population; in France, outside of Paris, there was only one to 2,360. It is true that in the United States as a whole the proportion of physicians to population is exceedingly high but this does not represent a fair criterion of availability owing to the large stretches of territory sparsely settled.

The rapid depletion of the medical force of the country involved in supplying 20,000 to 25,000 doctors for the military forces of the country is bound to raise a number of important questions in meeting the numerous problems that will arise in maintaining the public health of the civil and industrial populations upon the high levels thus far reached, and in improving conditions that may develop in connection with military industrialism.

According to calculations 28.4 per cent. of medical students were included in the first call, 19 per cent. would be liable to the second call and 51.9 per cent. to later calls. Had these students been taken from their studies, on the theory expressed in June by the Provost-Marshal, General Crowder, that medical students can continue their studies to the best advantage in the medical corps of the United States Army, the medical profession would have suffered an irreparable loss. The Association of American Medical Colleges, and all thinking men have expressed themselves as fully in accord with the idea that medical institutions should be preserved at all hazards until actual emergent conditions demand the release of medical students and members of the teaching staff.

Considering the experience of foreign countries it should be a matter of national

congratulation that a means has been found to prevent the Draft Law from disorganizing hospitals and medical education. The new order issued provides that hospital internes and medical students who have been drafted may enlist in the Reserve Corps and be assigned to the official duty of pursuing their studies or hospital duties in the interest of national welfare. The United States thus escapes carrying out what would have been the short-sighted policy, already deprecated by England, France and Canada, which are now suffering the dire results of an undermanned force of physicians for the civil and industrial population.

The new rule takes no cognizance of first year students in medical schools, probably for fear that a large number of men might take up medicine in order to avoid the draft. Undoubtedly the ranks of first year students will be greatly decreased, but, at least, there will be a reasonable protection of the medical profession in the interests of the public welfare for the next few years. It can not be denied that in all probability many of the physicians who have enlisted in the Army and have already been sent to foreign fields, or will soon find themselves there, will at the end of the war settle down to practice in other countries than the one from which war called them. There will be a far greater shortage of physicians in England, France, Canada and all the other belligerent countries than will exist in the United States.

The manifold needs for medical service in every large community will call for relief, war or no war. The number of surgeons now attached to military units will have been decreased by death and disability so that even with their return to their homes there will be an inadequate number of

trained and experienced physicians to meet the demands of the civil population. A large number of the medical men who have enlisted with the utmost devotion have sacrificed their homes, their practices, and every source of revenue. They will be free to take up work in whatever field promises the quickest return to economic independence. In all likelihood, therefore, the medical ranks in the United States available for the general population will be greatly decreased at the end of the war because of these conditions.

The protection of the medical students and internes represents a sound measure which will redound far more to the interests of the general public than to the profession. The solution as provided by the President is satisfactory for the present.

The draft has been wonderfully successful and the precision and carefulness with which its provisions have been carried out reflect credit and honor upon all who have been charged with the responsibility of carrying them into effect. Physicians have not been lacking in their fidelity and loyalty in serving the nation for the sake of aiding in the mobilization of the National Army. It is an act of wisdom on the part of the Government to safeguard the continued education of medical men capable of performing a real military service, thereby conserving the health of the nation and contributing to every phase of its development, civil, industrial and military.

Social Physicians.—A marked effect of establishing a country upon a war basis is the tendency to jeopardize the social benefits which have accrued thru years of patient effort and persistent endeavors. There is every indication that the virtue of so-

cial efforts for the preservation of the welfare of soldiers has been accepted as of paramount importance by the national government. There have been glaring evidences on the part of state governments of a willingness to sacrifice social legislation on the grounds of military necessity.

Foreign experience has clearly indicated the necessity of foresight and vision in the treatment of the civil population as a means of securing at least that degree of contentment compatible with industrial efficiency. Furthermore there has been general recognition of the inherent benefits of a rational policy that tends to promote the social welfare of every unit of society. The United States is called upon to take rapid strides in the development of social machinery that will be free from the entanglements of political lines and capable of prompt action for the relief of internal stress or difficulties.

In the new work of social reform which must arise from existent conditions, physicians will be called upon for more work, longer hours and greater sacrifices.

In the *Boston Medical and Surgical Journal* (August 23, 1917), A. F. Downing discusses The Medical Profession and Social Progress. "We have been too long a profession composed of men who have been satisfied to live the narrow, selfish and quiet unlovely lives of individuals, rather than the broader, more useful and most attractive lives of social beings." This statement may appear to be startling to those who are accustomed to regard the medical profession as the acme of altruism and self-sacrifice. The fault lies not so much in the medical profession as in the type of education which has developed it. As long as personal contact with sick individuals represented the field of medical efforts the accomplishments

necessarily had to be individual. Devotion, self-sacrifice, earnest purpose, constant application and indomitable energy in homes, hospitals and laboratories have characterized physicians thruout the world regardless of their individualism.

The Recognition of Social Problems in Medicine.—Thru the course of time a wider field of medical contacts has been evolved. The old limited ideas have received a broader application. Service to families as individuals has been expanded into potential plans for the redemption of larger groups of society. It is true that a large number of men within the profession have grasped the full significance of this social progress and have accepted leadership in fostering its advancement. It is now essential that the profession should seize upon the countless social problems in medicine which have been made manifest indirectly thru the results of individual medical developments. If the profession does not become "more generous, better trained, better organized, proper visioned, more influenced by a higher social morality" the medical profession will find a line sharply drawn excluding it from the ranks of the social minded, the idealistic workers for human betterment.

Dr. Downing points out that the new order "aims to eradicate those intolerable social conditions that tend to perpetuate disease, pauperism, degeneracy and crime." He points out that the modern view of social medicine includes opposition to the exploitation of children for commercial gain and the advocacy of constructive efforts to enable them to bring "to their life work healthy bodies and minds trained to the ideals of citizenship." He indicates the re-

lations between heredity and environment; he shows the social value to health of a living wage, healthful surroundings and decent housing. He refers to the advance in thought that bids industry be responsible for carrying its own burdens, that says our prisons shall not be regarded as merely wreaking vengeance of society upon the outcasts it has made. He correctly calls sickness "a concern of the community, to be prevented, if possible, and to be segregated, if dangerous."

It is more than phraseology to state that the entire view of the new medicine is in reality as old as the New Testament. It is more than idle ideation to term it the expression of a Christian view of life. Modern medicine is not essentially based upon a view of life that is limited to Christians but it represents those characters which have been attributed to Christ and other great religious leaders. Social medicine does mean faith and charity, justice and love, friendliness and honesty. But it means more particularly the reflection of a consciousness of human brotherhood—an acknowledgment of kinship. Social medicine is a manifestation of humanity, of vitality, of intelligent, scientific, rational communal living.

With one-fifth of the medical profession of this country soon to be in the service of the country, tremendous responsibilities will fall upon those who remain to fight against disease in civil and industrial practice. The new social consciousness will gradually be forced upon those who are to meet the serious problems of the non-combatants in times of war. Leadership will be taken by those who feel, who think, who know themselves, their profession, and the sanctity and depth of human relations.

Slowly, possibly imperceptibly, the wheels of social organization will grind; the train of social medicine will start on its way thru-out the country. Doctors will spring up here and there to speed it on its journey; some will try to jump aboard but fail from lack of agility. A number will fall beneath the wheels to be crushed; and still others will get on as the train slows down at the station nearest to them. Steam is up. The start will soon be made. The ride costs only a square deal to humanity. To fields of suffering, to cities of distress, to the sick, the weary, the down-trodden, the forsaken, the young and the old will come a new transport of joy, a firmer faith and a stronger hope at the sight of the onrushing socialized medical profession.

United States Birth Statistics.—For the first time in the history of the United States authoritative official figures on birth have been issued by the Bureau of Census. There is a certain feeling of pride in this accomplishment. Altho the collection of birth statistics was authorized in 1902, the Census Bureau only recently felt sufficiently convinced of the reasonable completeness and accuracy of birth registration to define a registration area for births. This now comprises the six New England States, New York, Pennsylvania, Michigan, Minnesota and the District of Columbia. While only ten per cent. of the total area of the United States is covered, it contains an estimated population which is approximately 31 per cent. that of the country.

According to the figures of 1915 there was a birth rate of 24.9 per thousand population. The death rate for the same area

during the same years was 14 per thousand. It is patent that the birth rate increased the population of the country during the year at the rate of 10.9 per thousand.

An analysis of figures makes it appear that more births occur annually among white, foreign-born married women proportionately to their number than among white married women of native stock. This further corroborates the various figures that have been presented showing the greater fecundity of foreign mothers over those native born.

As men are being taken from the general population it is a matter of serious importance to realize that while there are 1,055 male births to each 1,000 female births, the infant mortality of males was 110 as against 89 for female infants.

A comparison of the birth rate of the United States Birth Registration area with official statistics for births in foreign countries is fraught with considerable significance in view of the blighting effects of sustained military efforts.

In the United States (1915) there were 178 births per 100 deaths. In the Australian Commonwealth (1914) the figure was 267, in Austria (1912) 152, Belgium (1912) 152, the United Kingdom (1914) 167, German Empire (1912) 182, France (1912) 108, Italy (1913) 169, the Netherlands (1914) 227, New Zealand (1914) 279, Russia (1909) 152, Sweden (1912) 168.

It is interesting to note that Russia with a birth rate of 44 had an infant mortality rate of 248 per thousand, while the Netherlands, where birth control is an accepted institution, had a birth rate of 28.2, but an infant mortality rate of only 95. The birth rate of the United States of 24.9 was accompanied by an infant mortality rate of

100, while New Zealand with a birth rate of 26 had the exceedingly low infant mortality rate of 51 per thousand. The birth rate of the United States is not high and would be very much lower were it not for the benefits derived from the immigrant constituents in our population.

The death rate is low, tho not as low as that of Australia, Denmark, the Netherlands, New Zealand, Norway, or Ontario. The United States death rate is exceeded in Belgium, France, Italy, Austria-Hungary, Sweden, Switzerland and the United Kingdom, tho possibly more recent figures for these countries would alter the facts as at present recorded.

The statistical method of recording the assets and liabilities of the nation is now placed upon a rational foundation. The compilation of birth statistics is a marked step in advance and enables those interested to understand the vital resources of the country more intelligently. From this beginning it is to be hoped that our annual report will evidence marked progress in the development of the birth registration area. The creation of this area for official birth statistics for the first time, reflects credit upon the states within its borders, and discredits upon those which still lack sufficiently complete registration returns to be accepted as reliable bases for determining figures warranting the official authorization of the Census Bureau.

Fathers and Infant Mortality.—While ignorance and poverty have been recognized as the primal causes of infant mortality, the main efforts at relief have been directed toward the education of mothers. Milk stations, district nurses, church clubs, settlement workers, social visitors have labored

arduously in and out of the homes to correct the state of ignorance which has been held to be such a large factor in high infant mortality rates. Excellent results have followed these social efforts.

It is timely to consider the place of the father with relation to infant mortality. The report on *Infant Mortality, Bureau Publication*, No. 20 of the Children's Bureau, presents the results of a study in Manchester, N. H., that reveal some significant facts. It is clearly demonstrated that infant deaths are more than four times as frequent in those groups where the father's earnings are the lowest as compared with those in the highest earnings group. The actual income of the father supplies a most reliable index to the economic status of the family because it represents the chief support and the most stable and regular element in the family income. It represents, therefore, the scale of living attainable and determines the general habits of the family and its real economic status.

Increases in the family income due to the results of mothers' work introduces another factor in infant mortality, *i. e.*, the loss of the mother's care, particularly when such gainful occupation is outside of the home. The infant mortality in groups where the mother was in industrial pursuits had a higher percentage than among those infants whose mothers were not thus employed. The highest mortality existed among those whose mothers were employed away from home; similarly in this group the percentage of stillbirths was the greatest.

The infant mortality rate shows a marked and practically regular decline as the earnings of the father increase. "In the group of babies where the father's earnings are less than \$450 per annum the infant mortality

rate is 242.9, while in the next group, where the fathers earn from \$450 to \$549, the rate is 173.6. It rises very slightly in the next class, \$550 to \$649, namely, to 174.5, and thereafter drops steadily with each advance in economic status. The rate, however, does not fall below 100 until the father's earnings reach \$1,050 or more. Babies whose fathers earn \$1,250 and over per annum have a death rate of only 58.3." This significant decrease in the infant mortality rate coincident with the rise in the paternal income tends to demonstrate that the solution of the poverty factor in the infant mortality rate lies with the father, whose financial productivity must be increased. Obviously this is not within the province of all fathers alone but calls for the cooperation of society, as poverty is a reflection of poor social judgment.

Even when the father's earnings are supplemented by funds secured by the employment of mothers and children the total family income is not raised sufficiently high to have an effect upon the standard of living of the family that will cause a marked reduction in the infant mortality rate. When the father's earnings were under \$550 per year the supplemented income was brought up to \$850 or more in only 25 per cent. of the families. The supplementary income is principally characteristic of families where the father's financial achievements are exceedingly low.

The gainful employment of the mother when it accompanies the low earnings of the father is still associated with a high infant mortality rate. The fact remains that the reason for mothers entering into industrial employment appears to rest upon the low earning capacity of the male head of

the family. 85.2 per cent., of the families of which the mother was engaged in industrial work during the year after childbirth were in families where the earnings of the father were under \$850 a year, while the majority of all working mothers belong to the group where the father's earnings fell below \$650 per annum.

It is striking that the mortality rate of babies whose mothers were in gainful employment during the year preceding childbirth had a mortality rate of 199.2 whereas the rate for babies of mothers not thus employed was 133.9. The rate for babies whose mothers had gainful work in the home was 140.8 and those whose mothers worked away from the home was 227.5; this rate is only slightly lower than 242.9 reported for babies of the lowest economic class, that is, those whose fathers earn under \$450 per annum.

The gainful employment of mothers away from the home, and indeed the supplementing of the family income by taking in boarders or washing or similar employment at home must be regarded as a preventable factor in the infant mortality rate. Its existence is largely dependent upon the failure of the father to secure an adequate income to raise the family standard of living above that determined by conditions of poverty.

At the present time when large numbers of women are entering into industrial work because of shortage of male employees and because in many instances the financial support of wage earners has been sacrificed to the call of the country, it is important that consideration be given to the problem represented by poverty as effecting infant mortality. If families during times of peace have been losing children because of a lack of financial ability to give

them a healthful and safe environment, war conditions must not be permitted to further lower the safety of homes for infants. There is now, as never before, an urge for the protection of infantile lives in order to maintain the balance in population which is likely to be upset thru the death or disablement of men removed from civil life to participate in the defense of their country.

The country must be awakened to the battles to be fought within its own natural boundaries. The strife to combat ignorance has been waged with evidences of comparative success. A campaign must be waged against low wages and high prices, which acting in concert, militate against the best interests of the developing generation.

Women have been charged with the responsibility for bringing up children and to their ignorance many of the difficulties of childbearing have been attributed. The father has been overlooked as a contributing factor in infant mortality; his responsibility for decent living has escaped attention, altho poverty has been recognized as a significant etiological factor. Only a national awakening can successfully cope with these two elements which annually rob it of thousands of infants who are ruthlessly sacrificed to preventable causes.

Shell Shock.—The suggestion that "shell shock" is in reality a form of hysteria and is not due to concussion or actual injury from bursting shells tends to place it in the category of conditions due to inferior nervous and psychic organization. Whether systematic education as to its nature and origin may make it possible to prevent its occurrence is uncertain. An attempt to lessen

its frequency merits consideration, judging by its prevalence and by the numerous references to it in the literature of recent military medicine.

The difficulty of restoring the victim of trench shock to normality is well known. His absence from the fighting forces weakens their strength; and the fear of the battle precludes his prompt restoration to health. It would seem to be, therefore, of maximum importance to divert sufferers from trench shock far from the actual line of fire whenever possible and place them in an environment more conducive to health after their recovery from the initial shock. The numerous forms of work incidental to transportation, maintaining lines of communication, provisioning and reclamation should afford abundant opportunity for transforming a depressed, morbid, military incubus into an active, helpful, normal workman, capable of performing valuable service for his country and indirectly of aiding his fellow soldiers.

In any group of a thousand physically selected men there will be a few whose nervous systems are overcome by dominant and obsessive fears and for whom trench life and exposure to shot and shell is completely impossible, even after the expenditure of the utmost will power. Until it becomes feasible to determine which men are thus predisposed to trench shock or shell shock, there is bound to be disability from this cause. If, however, a man has once succumbed to this condition it would appear to be contrary to all principles of military effectiveness to send him back into the environment which produced his disability.

The processes of re-education should immediately be called into play in order to overcome the disordered nervous condition and thus convert a potentially willing

soldier into a being capable of sustained, constructive effort.

The mental phases of the war require fully as much study as those pertaining to the purely physical status of the army. The anticipation of mental disorders is not always practicable and the difficulties of cure are not readily overcome in an unfavorable environment. The soldier who serves the colors is entitled to every form of protection. Those who fail thru unconscious action of their own are no less honorable than those able to withstand every shock of military life. Their psychic wounds are no less real because they are termed hysterical. They are victims of warfare and must be regarded as presenting serious problems in prophylaxis and therapeutics.

Hookworm and the Army.—The organization of a national army in a democratic country is a momentous task. The processes of selection, transportation and organization afford numerous opportunities for displaying the wisdom and executive ability of those chosen to work out the destiny of the potential American forces.

In recruiting nearly a million men, there are huge responsibilities which are fully recognized and are being met by the national government with vigor and resourcefulness. It is natural that new problems should constantly arise which had escaped consideration in the hurry to attend to the main factors in the mobilization. To illustrate a single type of problem which must be considered, attention may be directed to "Certain Military Aspects of Hookworm Diseases" *Public Health Reports*, August 17, 1917.

Dr. Stiles points out the necessity of

studying recruits who may have been rejected because of underweight, with a view to determining the presence of infection by hookworm. His suggestions merit consideration, tho it is of course recognizedly impossible to examine the stools of all recruits. The idea of establishing a sanitary laboratory for examination of feces is not beyond the bounds of possibility. At an exceedingly low cost it would be possible to determine the presence of intestinal parasites particularly among the recruits now assembling.

Despite seeming difficulties the cost involved would be negligible compared with the gains in the health of the army, in promoting its physical and mental efficiency and in preventing premature and preventable disabilities. Furthermore there is an inherent danger of spreading the hookworm infection among our own troops and thru them causing an epidemic by the infection of trenches on European soil. If our military forces were to bear the hookworm infection into England, France, Belgium, or other countries to which they may be sent, it will take many years of time and vast expenditures of money to counteract the ravages of the disease thus introduced.

The discovery of intestinal parasites is not a difficult matter and microscopists can be trained for this specific work in a short space of time. Systematic examinations can be easily arranged and a short course of treatment would determine the fitness of infected recruits for military purposes.

In the rapid medical examinations incident to the draft, complete physical examinations have been practically impossible. It is no criticism of the examining physicians to state that many men have been enrolled into the armies who are not physically desirable from the standpoint of military

efficiency and permanency, particularly when consideration is given to the possibilities of a pension system holding over and increasing the burdens upon the financial resources of the country in future years.

The elimination of intestinal parasites as a practical measure is probably impossible. This fact, however, does not lessen its importance and makes it reasonable that an effort should be made to start with as low a percentage of infected troops as is humanly possible.

Poliomyelitis in 1917.—Considering the size of the epidemic of poliomyelitis during 1916, the experience of 1917 thus far is in striking contrast. In New York State, for example, in 1916, during July and August there were approximately 10,000 cases reported while during the same months of 1917 less than a hundred cases were brought to the attention of public health officials.

The scattering of cases in the state evidenced no apparent centers of infection. In the United States at large there were a few small local outbreaks but no considerable number of cases appeared in any state. The failure of local foci to develop into real epidemics introduces again many questions in the epidemiology of the disease.

No new light has been thrown upon the conditions which must exist to cause an epidemic to arise nor has further definite knowledge upon the relation of personal immunity to infection been presented. Certainly the further testimony of this year indicates that poliomyelitis, while infectious, is not highly contagious.

The sum total of results, as far as prevention and cure are concerned, that have arisen from the study of the paralytic plague of 1916 amounts to very little. The interest and

enthusiasm with which the disease was attacked and the studies undertaken reflect creditably upon the spirit of the profession; and, altho modern science has not been greatly enriched thereby a vast amount of clinical and pathological material was studied; thru this our knowledge of its forms of expression and symptomatology have been greatly clarified. The greater alertness of the profession and its increased familiarity with the manifestations of poliomyelitis will be of distinct advantage in meeting another epidemic, if the nation should be so unfortunate as to have to undergo a duplication of the nerve wrecking experiences of 1916.

It is a source of relief and congratulation that 1917 has escaped a widespread revisitation of devastating poliomyelitis with its attendant trail of death and disability.

Books.—One of the effects of war has been a marked decrease in the publication of books. In 1916 there was a decrease of 2,276 titles according to *Bulletin Number 14*, Bureau of Education. Reprints and new editions are decreasing in number as the number of native writers increases. It is interesting to observe that fewer than one-third of the books issued in this country are written by foreigners. Contrary to general belief the proportion of works of fiction is constantly decreasing. In 1890 fiction constituted 24 per cent. of the entire book output while in 1916 it amounted to only 8.91 per cent.

The general increase in books of science is noteworthy, varying from 93 in 1890 to 639 in 1916. The group of volumes termed *Medicine and Hygiene* had its banner year in 1909. Reprints are exceedingly numer-

ous in this class, averaging fully 20 per cent. of the total. In 1916 there were 516 works presented, with 119 reprints and 82 originating abroad.

The effect of war is particularly manifest in the works on history, as might be expected, while books of geography and travel have decreased markedly owing to the great interference with the natural migrating habits of men. General literature and education have failed to keep pace with the ordinary low averages. Sociology and economics have had a phenomenal growth, while philosophy, religion and theology have wavered little from the steady productiveness during the past ten years.

It is a difficult matter for the poor physician to keep pace with the boundless developments of his own profession while the laity expects him to be a source of information upon almost every topic appealing to the human mind. 1906 for example gave rise to approximately 10,500 new books, including 1,300 reprints.

It is manifestly impossible for any human being except a librarian to keep abreast of literature blossoming forth in such profusion.

As a form of education, relaxation, solace and inspiration, books are the noblest companions of thinking men. He who reads only works on medicine is narrowing his horizon and limiting his usefulness. He who devotes the largest part of his reading hours to fiction prepares himself for social intercourses, secures mental relaxation, but scarcely improves his working efficiency. He who, starting with medicine and hygiene, delves into the literature of education, science, sociology, economics, philosophy, essays, fine arts, poetry, drama, history, travel and biography broadens his

horizon, widens his mental experiences, develops his latent thoughts, powers and ideals and makes himself a unit of society, potentially capable and fitted for useful service.

Reading for diversion brings rest; reading for information secures intellectual enjoyment; reading for comfort develops repose and solace. Reading for inspiration brings courage, stimulation and power.

The physician as a teacher cannot accomplish his best results without the companionship of books. The work of the world that is worth while is perpetuated in writing that all may read. The libraries of physicians attest their interest in human affairs, their consciousness of the worth of human thought and activity. They are a bound index of the interests, enthusiasms and characteristics of their owners. They are vitally serviceable in the expression of his personality, and provide a helpful background of his public and private life.

The Importance of Food Economy.—

The enormous demands that are to be made on the food resources of the United States emphasize the importance of exercising economy in every possible direction. It is a well known fact that the American people are a wasteful people and that from ten to thirty per cent. of the food used is wasted or thrown away. One has only to examine the garbage heaps of the average city to realize the losses caused by careless or ignorant habits in the kitchens of the great majority of city homes. It is high time the people were aroused to the necessity for reforms in the handling of foodstuffs. As a means of revealing the actual situation and showing to the public how wasteful the

average household is there is much to commend the suggestion of the U. S. Department of Agriculture that the city food chemist analyze the city garbage from week to week and publish prominently what he finds as an index of the amount of food that can be saved by each community. Where there is no official chemist, the Department points out, local chemists capable of determining percentages of fats, protein, starch, and organic matter wasted in garbage can render great service to the nation by volunteering to make these analyses in their localities.

Vast amounts of bread, meat, and edible fats are wasted in garbage and tons of valuable feedstuff for animals are lost to the food supply of the nation by usual garbage reduction or disposal methods. One of the first results from the careful analysis of city garbage should be the passage of more rigid enforcement of garbage-collection ordinances, requiring that no glass, tin, wood, burnt matches, paper, string, or inorganic trash be mixed with the vegetable material, meat scraps, or bones which can be used for feed.

This dual collection of garbage and trash is being rigidly enforced by Germany in all cities of 40,000 people. Garbage so collected from a population of 17,000,000 people in Germany, altho the German garbage pail always has been far leaner than the American one and is especially light at this period, furnished briquettes rich in protein which when fed to dairy cattle produced 1,500,000 to 2,000,000 quarts of milk daily.

In most American cities, however, garbage is sent to reduction plants where all the fat and oil it contains is recovered for use in making soap or greases. The residue after the oil is extracted is used as fertilizer

or dumped into the ocean. This practice has been highly profitable because the American garbage pail is very rich in fat, American garbage averaging 3 per cent. of fat, while German garbage rarely shows even 1 per cent. of fat, as the German people never have been wasteful of animal or other fats. Another reason for the use of the reduction method is that in many cities ordinances prevent the use of garbage for feeding animals, particularly dairy cows, altho there is no valid hygienic objection to the use of dried and properly sterilized garbage as food for cattle or hogs.

The Department specialists believe that as the thrift idea gains ground less and less fat will be thrown into the garbage pail and are hopeful that the time is not far distant when the amount of fat will make reduction for the recovery of oils hardly worth while. This will mean that a lot of excellent and valuable foodstuff now being wasted as food will never get into the garbage pail. Even when all fat is eliminated, however, and waste of bread and cereals and meat has been reduced to a minimum, the garbage pail nevertheless will contain in the form of parings, plate scraps and trimmings a vast amount of material which should be conserved and used as feed for hogs, cattle, or poultry. First, however, the people must face the facts and know the truth of their waste, and in bringing this waste home local chemists can render effective service.

Sterilized Clothing.—Prof. Alfonso Muto, director of field hospital No. 59 of the Italian army, has devised a simple and effective method of sterilizing the soldiers' clothing as a prophylactic measure against exanthematous typhus. The writer claims

that in a 10 per cent. solution of creolin, we have a substance which has the advantages of not being inflammable nor harmful to human beings, nor having a disagreeable odor. It does not damage the texture of the clothes or affect their color, but on the other hand, protects them against moth. It is easily obtainable, cheap and destroys the parasites and their eggs in a very short space of time.

A Great American Surgeon Honored in France.

—The splendid work Dr. Joseph A. Blake has been doing in France since the war broke out has added much to the prestige of American surgery abroad. Remarkable reports have been forthcoming for sometime relative to the head and face surgery Dr. Blake was doing. Results that have hitherto been deemed impossible have been repeatedly obtained, and countless wounded soldiers, by all the canons of the past condemned to lives of uselessness by irreparable disfigurement or disabilities, have been patched up, made over and repaired so successfully that they have been given back to their country with their industrial efficiency only slightly, if at all impaired. So important has the French Government considered Dr. Blake's work that every courtesy has been extended to the hospital recently placed under his direction. This institution, located a few miles from Paris, is supported by the American Red Cross. Especial interest is attached to this hospital by reason of the fact that it was formerly the clinic of Dr. Doyen. On pages 655 to 658, will be found a series of pictures showing Dr. Blake's new hospital. Dr. Blake's many medical friends in America will be especially gratified to learn that the Legion of Honor was conferred on him a short time ago.



The Psycho-pathology of Prostitution.

—In his remarkable article discussing prostitution M. J. Karpas (*New York Med. Jour.*, July 21, 1917) says that in general prostitution may be divided into three large classes: 1, symptomatic; 2, environmental; and 3, constitutional. "The first is a symptom of a mental disease, neurosis of feeble-mindedness, a class of cases which sooner or later becomes recognized and isolated. The second represents only a small group of cases who enter prostitution because of some economic or social reason. This is the most hopeful class for readjustment and reclamation. The third is the malignant type, inasmuch as the constitutional factors are in the foreground. However, there is a possibility that in the early plastic stage, under proper social adaptation and intensive reeducational methods, something might be accomplished in saving these women from entering the field of prostitution.

With this general consideration of the subject of prostitution, we may now ask what can be done to solve this problem? Granting that prostitution is a moral scourge, the source of venereal diseases, and the disturber of home life, yet it is an evil which will probably exist so long as monogamous marriages will be in practice. Achauffenburg thoughtfully remarks: 'The harshest measures, flogging, the pillory, and capital punishment, proved of no avail in repressing the evil, which continued to spread and thrive only in a more secret and dangerous form, and they were always given up after a time. Thus in all countries, legislation has oscillated between extremes, turning from the method of herding prostitutes together in barracks to allowing them unlimited freedom, from occasional superintendence to the strict supervision of each individual. The tendency to respect the right of the individual and to place them above those of society on the one hand, and on the other the moral fear of sanctioning the evil by legally allowing it, have always led to the repeal of regulative measures.

This has been followed by such a spread of prostitution in its most dangerous, clandestine form that it later became necessary to recognize and regulate it again.'

It is obvious that the rational approach of this problem should embrace the following important points: 1. Proper sexual enlightenment should be given to young men and women in schools and colleges. The men especially should be fully acquainted with the nature and character of venereal diseases, and particularly of the effects of syphilis. Efforts should not be spared to emphasize the fact that the prostitute is directly or indirectly responsible for every case of syphilitic infection. 2. Every attempt should be made to recognize the abnormal personality of the prostitute in the formative period and adjust her to such an environment as would meet the needs of her mentality. 3. The necessity of creating hospitals for prostitutes with chronic venereal diseases is self-evident—indeed, their detention there should be determined by the duration of the virility of the venereal infection. 4. The question of actual segregation of prostitutes under strict police control and medical supervision should receive careful and thoughtful consideration, for after all, which is the greater evil: the segregation of this vice, or allowing it to disseminate and exert its pernicious influence upon society?"

The Dehydration of Foodstuffs.—"At the present time the food supply of the world is the lowest in the memory of this generation," states the *Medical Record* (June 23, 1917), "and in all likelihood it has never been lower, taking the world at large, since the beginning of civilization. For various and obvious reasons, which are well known and into which there is no need to enter here, the call upon this country for food during the ensuing few years will be enormous. Her exports of food must be on a stupendous scale, and in order to meet all demands not only must the supply be very largely increased but waste must be avoided and economy practiced in every possible way. It is stated by those versed in the subject that the production of food in America is not so great as formerly, and that the food situation generally is some-

what unpromising. However, we shall not deal here with this phase of the matter but shall briefly discuss a means of economizing the food supply which is only now coming into general practice. Dehydration is the method referred to, the dehydration of vegetables in particular. Methods for drying certain edible substances are as old as the hills. Sun drying of meat and fruits as a means of preservation has been handed down from the most primitive times, while heat has been utilized for the same purpose, almost, perhaps, from the time that the discovery of fire was first made.

Within recent years artificial modes of drying fruits and, to a lesser extent, vegetables have been extensively used and have, on the whole, been successful. In the course of the past two years an American process has been perfected whereby, it is stated, moisture can be removed from vegetables and fruits without materially injuring their nutritive properties or their palatability."

According to an article by R. G. Skerrett, which appeared in the *Scientific American*, March 10, 1917, the essential features of this process consist in using heated air at temperatures far below those hitherto employed and insuring a thoro circulation of the air currents so that every particle of the vegetables or fruit undergoing the process is reached. The moisture is stated to be extracted in such a way that the residual water is well inside 12 per cent. and the dehydration does not injure the cellular membranes of the vegetable matter. Another important feature of this process is that it is accomplished within a period of from two and one-half to five hours. As a consequence of the development of this method the vegetables and fruits dried thereby are declared to retain to a remarkable degree their fresh taste and full flavor when prepared for the table; and because their cellular structure is uninjured they reacquire a normal appearance in a short time after having been soaked in water. Presumably, of course, their vitamin elements are left intact.

The significance of such a method of preserving vegetables is at once obvious. Vegetables, some of which, for example, are of great food value, can be kept stored for an indefinite length of time without losing any of their valuable properties. By this means, too, waste of both vegetables and fruits can

be very largely avoided, as dehydrated food-stuffs can not only be kept for an almost unlimited period of time, but owing to the possession of this quality and also to their small bulk can be easily transported. It may be stated that already a large proportion of the vegetables used by the French are shipped to France in dehydrated form from Canada and from this country. The potentialities and possibilities of the dehydrating industry are almost beyond conception, and if the process is as successful as it is said to be, it may well prove a preponderating factor in the solution of the food problem.

Nailing a Lie.—"Some little time ago," says an editorial writer in the *Long Island Med. Journal* (July, 1917), "the daily press published a complaint made by some enlisted men that conditions on the Hospital Ship Solace were unspeakable. The accusation, which was made in the form of a round robin, alleged overcrowding, lack of drinking water, inattention, lack of beds, and such filthy practices as the piling together of bedding from cases of scarlet fever, measles and other communicable diseases, and the washing of infected dishes in lavatory basins intended for the use of patients. The impression made by a communication of this kind is always a painful one because of the common feeling that where there is smoke there must be fire and the further impression that conditions must be exceptionally bad to have driven enlisted men to the length of airing their complaints in round robin form. It is with more than usual satisfaction, therefore, that one reads the report of the committee of investigations, composed of Dr. William H. Welch, Dr. Abraham Flexner and Mr. Nathan Straus, whose respective standing in the community is an absolute guarantee of the fairness of the investigation. These gentlemen find that when the charges were written the commander of the Solace had to meet an unusual crisis and care for an extraordinary number of patients; that in consequence, litters were used to supply the lack of berths and cots, but that, nevertheless, isolation of the various types of disease was efficiently observed and that at no time was the bedding of scarlet fever patients placed where it could be used by patients with the measles. The commit-

tee sifted the charges with great thoroughness and seems to have finally limited them to the outpourings of one malcontent who combined with a few minor facts of his own experience a deal of hearsay and wove it into a composition of formidable appearance. If one is to judge of the credulity of the American people by the number of circumstantial accounts of serious happenings that are being suppressed by the Government, of disguised German spies, of troops slipping out on transports in the still hours of the night, and so on, it may be readily judged to what proportions this unfounded publication of an irresponsible sailor will swell as it passes over the country and no amount of official investigation and official denial will ever quite wipe out the track of the lie until it dies a natural death. Its publication has done great harm that is by no means offset by the gratifying truths brought out by the investigators in their report."

The War Time Duties of the Civilian Practitioner.—The following from the *Medical Council* (July, 1917) states in admirable terms the duty of the civilian doctor during these trying times. Especially says the author, "should we work for the suppression of the liquor traffic during the war, for the control of vice and venereal disease, for the proper production and handling of healthful foods, for the ruthless suppression of the illegal traffic in narcotics, for the hunting out and prosecuting of abortionists, for the removal of insanitary conditions, for the prompt suppression of epidemics and for the limitation of quackery and fake medicines. Furthermore, we owe it to the Government, the physicians away from their practices and to our communities to promptly report in medical society meetings any medical irregularities wilfully persisted in by misguided and commercially-minded doctors; and the medical societies should take such cases in hand with all firmness. The medical societies must discipline refractory doctors in civilian life, even as the army and navy discipline their personnel. Wilful continuance in medical practices detrimental to the well-being of the people must be reported, so that the licenses of guilty doctors be revoked or suspended. We can't tolerate such things in time of war; and it is our

duty to ferret out all advertising quacks and medical pretenders who are not qualified for some line of useful activity, and to report them to the authorities for such action as may be proper.

Physicians who drink liquor while on duty should pause and think the situation over. Remember what happens to the military physician drunk while on duty, and just recall that your work is just as important to the Government as is his and you are morally under the same obligation as to temperance. And let us also be temperate in our use of tobacco and all other unnecessary indulgences, encouraging others to the same point of self-control. Let us remember that we are soldiers."

Soap in Treatment of Wounds.—Patynski reports in the *Medical Press and Circular* (Aug. 15, 1917) that he has obtained very satisfactory results from the use of soap. He has always made use of the Marseilles soap of commerce, of good quality, and standardized at 72 per cent. This he has employed in the way of lavages, irrigations, and local applications in the form of saturated compresses. For the lavages and irrigations, he utilizes a solution of 25 gm. to the liter of water, either sterilized or simply boiled. The standard strength may even be raised to 5 per cent. without any resulting inconvenience. Compresses are prepared by soaking in a 20 per cent. solution. The soap is sterilized after grating into powder, by exposure in an oven to a temperature of 120 C. for an interval of five minutes. In cases of special urgency the surface of a piece of soap is aseptitized by plunging the mass into boiling water. Also, under similar circumstances, the ordinary muslin compresses can be reliably replaced by some other tissue previously boiled. These preparations have always been readily tolerated by the skin, and have not produced any signs of local irritation, even after a continuous application of four, five or six weeks.

Surgical Therapeutics.—"There is much in the surgical therapeutics of today" says Albert Vanderveer (*Medical Record*, Sept. 22, 1917) "that seems thoroly reliable for us and beneficial to our patients, and yet it is too true that comparisons can be made

relating to certain forms of sepsis, in which results are not much better than four decades ago. Laboratory research has done much to aid us in our precision of diagnosis, but on the other hand have we made that progress in treatment consistent with these advances. If we are candid with ourselves, must we not admit that there are too many deaths from septicemia, not only among members of our own profession, but among patients from all the various walks in life; not in one city or section, but from our country at large? To express my convictions that in our studies regarding laboratory experiments and results I am convinced that we have placed too much confidence in the mildness of certain forms of pathogenetic microbes, and forgotten somewhat our long-established knowledge of the histology and location of certain anatomical structures. We must harmonize our knowledge and become more alert in the application of wisdom."

Dosage in Old Age.—"The ancient dictum that doses must be diminished in childhood and old age" states I. L. Nascher (*Medical Council*, Sept., 1917) "does not hold good in old age, except with sedatives, and sedatives are seldom required in senility. Stimulants and tonics must be given in large doses, and if they are used for a long time the dose must be constantly increased. The system rapidly habituates itself to a drug, and if another drug of the same class is substituted the new drug must be given in correspondingly large doses. In combining drugs the rapidity of action of each must be considered. Morphine depresses and may paralyze the respiratory centers, and to prevent this atropia is added. But morphine acts more rapidly in the stomach than atropia, and it may cause fatal respiratory paralysis before the atropia has begun to exert its counteracting effect. Given hypodermically, they act together. Vegetable astringents are absorbed slowly or not at all, while salines are absorbed rapidly. I have frequently found gelatin capsules and pills pass thru the bowels unchanged.

Iron is apparently not assimilated in old age unless there is a very low hemoglobin percentage. I have given inorganic and organic iron preparations for months in senile cases without increasing the hemoglobin content of the blood."



THE RELATION OF THE JEWS AND OF JUDAISM TO THE MEDICAL ART.¹

BY

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Introduction.—Much has been written upon the important influence which the Jewish people during their long history have exercised upon science and the practice of medicine. There are many works on the medicine of the Bible, on the medicine of the Talmud, on the history of Jewish physicians, on their contributions to medicine.² But as yet no comprehensive history of the relation of the Jews to medicine has been attempted. The writer proposes no such task for himself; he desires to prepare what may be regarded as an introduction only to such a work. It is his intention to present the historic facts, bearing first upon the relation of the Jewish people to the practice of the medical art and to the profession of medi-

cine and next upon the relation which the non-Jewish world, Christian and Moham-medan, in various lands and at various times bore to the Jewish physician and to the rights and privileges of the Jews to engage upon the practice of medicine. This will include the legal, ecclesiastical and social conditions which form the background of a history of Jewish physicians. The first chapter will embody the historic relation of the Jews and of Judaism toward the science and the art of medicine, and the esteem in which this profession was held by the Jewish people from the earliest period of which we have record down thru the long annals of their history.

The Relation of the Jews and of Judaism to the Medical Art.³—Medicine and religion were closely allied among the ancient Jews. The priests were the custodians of medical knowledge and they were charged with the supervision of public sanitation. The conflict between religion and science began in very early times. The question was raised whether it is permissible to call on physicians for relief in illness and not to rely upon God alone. Simple interpretation led to the view that medical effort on the part of man was useless or even sinful interference with the will of God, as diseases were the punishment for sinful conduct, the manifestations of divine displeasure and rage. "If thou wilt diligently hearken to the voice of the Lord thy God, and wilt do that which is right in His eyes, and wilt give ear to His commandments, and keep all His

¹ I desire to express my grateful appreciation to Professors Alexander Marx and Louis Ginzberg of the Jewish Theological Seminary for their help in the preparation of this paper.

² In his address on Morgagni in 1894 before the International Medical Congress in Rome, Virchow said: "In early mediaeval times it was the Jews and the Arabs who made a definite impression upon the progress of medical science. In our times Hebrew manuscripts have been brought to light which show with what zeal and learning Jewish physicians of early mediaeval times were active in the preservation and advancement of medicine. We may in truth say that down to these times the hereditary talent of the Jews, which has contributed so much that is great, to science, can often be discerned."

³ The writer has dealt with certain phases of this subject in two earlier essays. "The Ethics of the Practice of Medicine from the Jewish Point of View" in the "Bulletin of the Johns Hopkins Hospital," August, 1917, and "Wit and Satire on the Physician in Hebrew Literature" to appear in the "Annals of Medical History."

statutes, I will put none of the diseases upon thee, which I have put upon the Egyptians; for I am the Lord that healeth thee" (Ex. 15.26). The satirical account of the death of King Asa puts this view clearly: "And in the thirty and ninth year of his reign Asa was diseased in his feet; his disease was exceedingly great; yet in his disease he sought not to the Lord, but to the physicians" (II Chron. 16.12,13). Job (13.4) speaks of "physicians of no value" and Jeremiah (8.22) asks: "Is there no balm in Gilead? Is there no physician there? Why then is not the health of the daughter of my people recovered?" Tobit (2.10) tells that he "went to the physicians" for his diseased eyes, "they helped (him) not" and he was cured by miracle.

At a later period the Midrash says: "The door that is not open to good deeds will be opened to let the physician enter."⁴

The practice of medicine for which justification was found in Biblical Law (Ex. 21.19) was harmonized with the belief that disease and its cure lay in the hands of God and with submission to Divine will. This is clearly stated by Ben Sira (Ecclesiasticus, 38). I shall quote from Dr. Schechter's translation of his rediscovered original Hebrew version. According to Dr. Schechter, Ben Sira "belonged to a generation which had already come under the Hellenistic influence under which Asa fell by the conquest of Alexander the Great, but . . . never saw the reaction . . . by the Maccabaeans."⁵

38. 1 Honour a physician before need of him.
Him also hath God apportioned.
2 From God a physician getteth wisdom.
And from a king he shall receive gifts.
3 The skill of a physician shall lift up his head;
And he shall stand before nobles.
4 God bringeth out medicines from the earth;
And let a prudent man not refuse them.
5 Was not water made sweet with wood,

For to acquaint every man with his power?

- 6 And he gave man understanding;
To glory in his might.
7a By them doth the physician assuage pain;
8a And likewise the apothecary maketh a confection:
8b That his work may not fail;
Nor health from among the sons of men.
9 My son, in sickness be not negligent:
Pray unto God, for he will heal.
10 Flee from iniquity, and from respect of persons;
And from all transgressions cleanse thy heart.
11 Offer a sweet savour as a memorial;
And fatness estimated according to thy substance.
12 And to the physician also give a place;
And he shall not remove, for there is need of him likewise.
13 For there is a time when in his hand is good success:
14a For he too will supplicate unto God,
14b That he will prosper to him the treatment,
And the healing, for the sake of his living.
15 He that sinneth against his Maker
Will behave himself proudly
against a physician.⁶

Dr. Schechter's comments are most interesting.

"Ben Sira's pleading: 'Was not water made sweet with wood, to acquaint every man with His (God's) power (38.5) seems to have been directed against a sort of Jewish scientist who saw in the physician a man counteracting the designs of God. The Rabbinic remark on Exodus 21.19, 'that the law gave permission to the physician to practice his art,' points also to the existence of such objections on the part of some 'peculiar' Jews. 'Nothing is new under the sun,' not even folly.

Of course, as a pious Jew, Ben Sira per-

⁴ Cant. r. ad 6, 11 fol. 35b.

⁵ From Schechter's *Studies in Judaism*, second series, page 55, on "Jewish Life in the Time of Ben Sira."

⁶ From "The Wisdom of Ben Sira, Portions of the Book Ecclesiasticus." Schechter, Cambridge, 1899.

ceived in the physician an instrument of Providence, or, as he expresses it,

'From God a physician getteth wisdom' (38.2). Hence his advice to the patient.

'Pray unto the Lord for He will heal.' (38.9). Ben Sira likewise assumes that the physician

'He, too, will supplicate unto God,

That he will prosper to him the mixture' (38.14).

But he distinctly warns the people not to neglect the physician. 'Honour the physician,' Ben Sira says, 'before thou hast need of him' (38.1) and concludes the chapter with the words: 'He that sinneth against the Maker, will behave himself proudly against a physician' (38.15). In consequence of a misreading of the Hebrew by the Greek translator, the versions give: 'He that sinneth against the Maker let him fall into the hands of the physician.'

The important place which the physician had secured in the time of Ben Sira is clearly shown in the passages quoted. Ben Sira sees in the physician the divine servant appointed to carry out the will of his Master, upon whose help he calls and relies. This view is likewise expressed in the Talmud which assumes that the physician is granted divine permission to treat disease.

In the Midrash⁷ we are told the following story:

R. Ismael and R. Akiba were walking thru the streets of Jerusalem. Another man was with them. They met a sick man. "Masters," said he, "tell me how can I be cured?" "Do thus and thus," they answered, "and you will be cured." Then the man who was walking with the rabbis asked: "Who has inflicted the illness upon this poor man?" and they answered: "The Holy One, blessed be He!" And the man replied: "You interfered in a matter which is not your concern. God has punished and you wish to heal! Are you not acting contrary to His will?" "What is your vocation?" asked the rabbis. "I am a tiller of the soil. Do you not see the vine-cutter in my hand?" "But who created the vineyard?" they asked. "The Holy One, blessed be His name." Then said the sages: "You interfered in this vineyard which is not yours? He created the vineyard and you cut away

its fruits?" And the farmer answered: "Did I not go out to cut, to weed out and to gather, surely the vineyard would not produce the least fruit." "Then fool that you are, have you not learnt in your work what is written: (Psalm 103.15) 'As for man his days are as grass.' Just as the vine without care and preparation will not grow and bring forth its fruit, but will die; so it is with the human body. Man requires herbs and medicine and the tiller is the physician."

But the Talmud does not question the propriety of calling upon the physician for help in illness nor does it regard this as failure to rely upon God to restore health. Exodus 21.19 was looked upon as the authoritative basis for this view. The Talmud says: "Who is in pain let him go to the physician" (Baba Kamma 46b).

The importance of prayer which is emphasized in Ecclesiasticus 18-9 is thus put in the Talmud: "Man must ever pray not to become ill; for if he becomes so, it is demanded of him to show merit in order to be relieved" (Talmud Sabbath 32a). The Talmud⁸ records a prayer recited before and after bloodletting: "May it be Thy will, Oh Lord my God, that this act may restore my health and heal me, for Thou are the faithful Healer and Thy healing is true." The prayer recited after the bleeding was: "Blessed be He who freely gives healing."

The Talmud (Berachoth 10b Pessachim 56a) relates that King Hezekiah made away with books on medicine and the sages approved of this act, because it deterred the sick from relying entirely on human aid.⁹

The responsibility of his profession was felt by the physician. Ben Sira (Ecclesiasticus X. 10) says: "The slightest illness excited the physician. Today (he is) a king, tomorrow he falls."¹⁰

A distinction was made between the physician (Rophe or Asje) the surgeon (Rophe umman) and the leech who was re-

⁷ Berach. 60a.

⁸ The reason Maimonides gives for King Hezekiah's action is that the books contained magical formulas and superstitious and idolatrous methods of treating disease and that they were destroyed so as to remove from the people this lure to idolatry.

¹⁰ Professor Louis Ginzberg thus translates the passage which in other translations is unintelligible.

⁷ Temurah Chap. 2 in Jellinek's Bet ha-Midrash I. page 107.

garded with less esteem.¹¹ Physicians in the period of the Talmud were also known as "Hakim."¹²

There appears to have been some form of licensure for a distinction is made in the Talmud¹³ between physicians who practiced under the authority of the Courts (Bet Din) and those who had no such authority.¹⁴ The physician was called in by the rabbis in appropriate cases as expert.

A number of epigrammatic sayings in the Talmud about physicians and the commentaries upon them will prove interesting as bearing upon the relation of the Jewish people to the practice of medicine.

Abba Arika, head of the Academy of Sura (born in Palestine about 150, died in Babylonia in 247 C. E.) said to Rabbi Asi, "*Do not live in a city whose head is a physician.*"¹⁵

According to Professor Louis Ginzberg this "does not reflect discredit on the medical profession. A very similar saying is 'Do not live in a city, whose head is a scholar.'¹⁶ Of course the rabbis do not know any more praiseworthy profession than that of the scholar, yet they are of the opinion that a scholar should not take a leading part in political life. Some of the commentators (Rashi, ad loc.) maintain that 'physicians' in this saying stands for scholars.' Another explanation of this passage is that 'Asi' is the name of the person to whom the advice was given, and the passage is to be translated as follows: Says Rab to Rabbi Asi: 'Do not live in a city whose head is Asi.'¹⁷ This is very clever but far from being the truth."

"*In a city where there are not ten things no learned scholar must live*" and among these are a physician and a surgeon.¹⁸ Maimonides (Yad hahefakim) includes this among the ritual ordinances of ancient Jewry.¹⁹

¹¹ See Preuss, Virchow Archiv. Vol. 138, page 275.

¹² Quoted from Rappaport in the Bikure Hatim, Vol. 8, by Fein. "Die Stellung der Aerzte im juedischen Alterthume." Ben Chananje 1860, Vol. III, page 539.

¹³ Tasefta gittin IV, 6.

¹⁴ Preuss, Virchow Archiv. 138, page 268.

¹⁵ Talmud, Pesachim 113a.

¹⁶ Talmud, Pesachim 112a.

¹⁷ Comp. Tosafot on Baba Batra, 110a, and Aruk sub voce.

¹⁸ Talmud Sanhedrin 17.

We may here add that the Midrash²⁰ states: "*Unhappy is the town whose physician has the gout!*"²¹

The Talmud (Baba Kama 85a) discusses the question arising in a case of an injury inflicted, when the one who produced the injury suggests the treatment. Should the latter say: "I shall call a physician for you without pay," the former would answer: "*A physician without pay is of no use.*" Should the latter say: "I shall procure a physician from a distance," the former would answer: "*The physician is far away, the eye is blinded.*"²²

An epigram that has led to endless discussion is the well known sentence "*The best of physicians is fit for Gehenna,*" attributed to Rabbi Judah.²³ I am indebted to Professor Ginzberg for the following: "Rashi's explanation was in its main aspect accepted by all the later commentators. According to Rashi's view the Mishna censures the physicians for two reasons. They are blamed for their overconfidence in their craft, which results in their trusting in it, instead of trusting in God. They are further blamed for commercializing their profession, to that extent that they sometimes fail to attend the poor. The death of the neglected poor is tantamount to homicide committed by the physicians. The one sin,

²⁰ Quoted by Oppler "Einiges aus der Altjuedischen Medizin," Deutsch. Arch. fuer Gesch. d. Med., Vol. IV, page 62.

²¹ Levit. R. Fol. 9a.

²² Quoted by Preuss "Der Arzt in Bibel und Talmud," Virchow Archiv. Vol. 138, page 26.

²³ This sentence has been variously interpreted and translated. The translation given is that kindly furnished me by Professor Ginzberg who adds, "The meaning of this proverb is adequately explained in Aruk as follows: 'The patient will lose his eye before the physician from far away will arrive.' The Greeks and the French have similar proverbs. 'Après la mort le medecin.' Rashi understands the passage to say that a physician who does not live in the neighborhood of the patient is careless, as he does not care for the consequences. A similar explanation is given by Rabbi Menahem Meiri as quoted in Shita Mekubbezt ad loc., who is of the opinion that the expression . . . is to be taken figuratively: The physician from far away blinds the eye, i. e., misleads the people."

Cassel (Ersch and Gruber, Vol. 27, page 44) interprets the sentence thus: "The physician from afar destroys the eye" because he is not likely to be as conscientious as one from the home town would be.

²⁴ Mishna Kiddushim IV, 14.

as the other is rightly punished with the pains of Gehenna. Berakot 60b gives the prayer²⁴ to be recited while undergoing an operation, or taking medicine, and in this prayer special emphasis is laid upon the fact that all cures come directly from God, tho men are accustomed to make use of physicians. It is obvious that the physicians claimed more for themselves than this doctrine of the rabbis granted them. There is nothing surprising therefore, in the condemnation of the medical profession by the theologians. By the way, I have no doubt that the statement of the Mishnah, in its original form, was nothing but a pun, based on the assonance of 'Rophim,' physicians and 'R'phoim,' the dwellers of the nether world. . . . It should also be mentioned that Septuagint Isaiah XXVI, 19, renders 'R'phoim' by 'ungodly,' while XXVI, 14, is rendered 'neither shall physicians by any means raise (them) up.' All this goes to show how easily 'Rophim' and 'R'phoim' were confused.

"The famous Polish Talmud commentator, Rabbi Samuel Edels explains the saying of the Mishnah concerning the physician in the following way: 'He who thinks himself the best of physicians is destined for Gehenna.' Such a one is apt to have overconfidence in his skill and to risk too much, so as even to cause the death of his patients. There may be some truth in this statement, but of course the Mishnah does not mean it. The great Italian Talmudist, Lampronte, who was at the same time a famous physician, is of the opinion that the Mishnah censors the surgeon, who without the advice of a good diagnostician performs operations and often causes death. A Cabalistic philosophical interpretation of the Mishnah is given by the great Rabbi Loeb of Prague: Gehenna stands for the material world, which according to the doctrine of the Cabalists is nothing but the negation of real existence, the spiritual. The physician or in other words the naturalist, who knows only the material world will end in Gehenna, in 'non-existence.'"²⁵

²⁴ Referred to above.

²⁵ The above is taken from a personal letter to the writer. An interesting explanation of this difficult sentence is to be found in Rabbi Solomon Aben Verga's "Shevet Yehuda" in the course of a discussion between Pope Martin V. and Don Samuel Abraballa and Don Salomo ha

Jewish physicians relied upon natural methods of treatment and despised the magical arts.²⁶ Incantations and amulets were certainly used less among the Jews than among other people.²⁷ Amulets of various kinds have however never disappeared from among the Jews, down to this day, in spite of their strong condemnation by many rabbis. Maimonides²⁸ inveighed against them. In his great work "The Guide for the Perplexed," he says: "Do not be led astray by the madness of writers of amulets, by what you may hear or read in them. The divine names which they put together in various letters have not the least significance. These mystics it is true, are possessed with the delusion that in their inscription there must needs be purification and sanctification and that they will produce miracles. A sensible and educated person however, should not listen to such absurdities and still less give them credence." It is only in cases of dangerous disease that Maimonides permits an exception to be made, yielding to popular superstition "lest the mind of the patient be too greatly disturbed."

Maimonides²⁹ opposition did not receive universal assent. Nachmanides, himself a physician, and Ibn Adreth approved of the use of amulets for curative purposes; they even permitted their writing on the Sabbath, if demanded by the patient.³⁰ On the whole however, we agree with Abrahams,³¹ who says: "If there was one characteristic ex-

Levi, ambassadors of the Spanish Jews to Rome, (1418). The latter in answering said: The best physician is fit for Gehenna, signifies that he should always see Gehenna opened before him should he cause the death of anyone whose health has been entrusted to him. As a consequence they must carefully consider (the treatment) and apply all their thought to it. It is well therefore that they should be mindful that they are destined for Gehenna if they do not give sufficient thought to their patients (Shevet Yehuda, Chap. 41). Aben Verga was a physician and lived in Seville in the second half of the fifteenth century.

²⁶ Cassel in Ersch and Gruber, Vol. 27, page 44, who quotes Origenes (185-254, C. El.).

²⁷ Cassel, loc. cit.

²⁸ Moses ben Maimon by Muenz 1912, page 255.

²⁹ 1135-1204.

³⁰ Professor Neuman has called my attention to this in a citation from the Responsa of Ibn Adreth. (Vol. II, 281; IV, 245; V, 119).

³¹ "Israel Abrahams' "Jewish Life in the Middle Ages," introduction page XIX.

cellence in Jewish medicine in the middle ages, it was precisely its dependence, not on authority or mystery, but on actual trial or experiment. 'Do not apply a remedy which thou hast not thoroly tested,' wrote Judah Ibn Tibbon for his son's guidance in the twelfth century. Jewish doctors were placed under such strict and jealous surveillance that they urged one another 'never use a cure the efficacy of which they could not prove by scientific reasons.'"

It must not be inferred that the discussion was closed as to the propriety of medical practice from the theological point of view, a question which disturbed the Christian Church until recent times. Maimonides gave a clear and unequivocal answer, stating that "one who is ill has not only the right but also the duty to seek medical aid,"³² without citing biblical authority, probably regarding this as unnecessary. Criticizing the view that the sick should rely on prayer instead of seeking medical aid, he points out that "the means of curing disease are given by God as is bread we eat and we must give thanks for the one as for the other; and that He has given wise and skillful men the knowledge how to prepare and how to apply them."

Ibn Esra the contemporary of Maimonides about 1170 held the singular opinion that it was permissible for physicians to treat only in cases of external disease.³³

This is not the place to discuss the attitude of the mediaeval Christian world toward science and toward medicine in particular. But we can better appreciate the attitude of the Jews when we remember the position taken by the Christian Church. In the 6th century, Pope Gregory I showed his hostility to the study of medicine. "In the beginning of the 12th century the Council of Rheims interdicted the study of law and physic to monks and a multitude of other councils enforced this decree." "St. Bernard declared that monks who took medicine were guilty of conduct unbefitting to religion. Even the school of Salerno was held in aversion by multitudes of strict churchmen, since it prescribed rules for diet thereby indicating a belief that diseases arise from natural causes and not from the

malice of the devil; moreover, in the medical schools Hippocrates was studied and he had especially declared that demoniacal possession is 'nowise more divine, nowise more infernal, than any other disease.' Hence it was doubtless, that the Lateran Council, about the beginning of the 13th century, forbade physicians, under pain of exclusion from the church, to undertake medical treatment without calling in ecclesiastical advice.

"This view was long cherished in the church, and nearly two hundred and fifty years later Pope Pius V revived it by renewing the command of Pope Innocent and enforcing it with penalties. Not only did Pope Pius order that all physicians before administering treatment should call in 'a physician of the soul,' on the ground, as he declares, that 'bodily infirmity frequently arises from sin' but he ordered that, if at the end of three days the patient had not made confession to a priest, the medical man should cease his treatment, under pain of being deprived of his right to practice and of expulsion from the faculty if he were a professor, and that every physician and professor of medicine should make oath that he was strictly fulfilling these conditions."³⁴

Even at the time of greatest depression and reaction in Jewish history when for a short period the revolt against science and philosophy led in 1305, to the threat of excommunication against those who read works on philosophy before they were twenty-six years of age, even at this time medicine was specifically excluded from the ban and its study permitted on the ground that its practice is permitted in the Talmud.³⁵ It is worth mentioning that in this struggle between reaction and progress the latter won the victory. We read its spirit in a remarkable letter of Yedaya Penini Bedarsi, written in 1305-6 and addressed to Rabbi Solomon Ibn Adreth, who had pronounced the ban of excommunication upon those engaged in study of science. "We cannot give up science; it is as the breath of our nostrils. Even if Joshua were to appear and forbid it we would not obey

³² Commentary to Mishna, Pessachim IV.

³³ Cited by Preuss, Virchow Arch. Vol. 138, page 277.

³⁴ White, History of the Warfare of Science and Theology, Vol. 2, page 37.

³⁵ Graetz, Eng. Edition, Vol. IV, Chap. I, page 40.

him; for we have a warranty which outweighs them all, *viz.*: Maimuni, who recommended it, and impressed it upon us. We are ready to set our goods, our children and our lives at stake for it."⁸⁶

The position which medicine took among the Jewish people, the esteem in which physicians were held is best seen in the long line of their rabbi-physicians beginning in the days of the Tannaim and headed by Mar Samuel in (165-257) and reaching down thru the centuries to comparatively recent times; one of the delegates to the Synhedron called by Napoleon in 1806 was a rabbi-physician.⁸⁷ Various reasons are assigned for the frequency with which the Jews combined these professions. During all their history the rabbis were devoted to science, in part because of its important bearings upon sacred literature. It has already been pointed out that medicine was sanctioned by biblical and Talmudical law and therefore enjoyed a certain sanctity in their eyes. Then again it must be borne in mind that it was not regarded as proper to earn one's livelihood thru the study or the teaching of the word of God and the sacred law. "Rabbi Gamaliel, the son of Rabbi Judah the Prince, said: 'An excellent thing is the study of the Torah combined with some worldly occupation, for the labor demanded by them both makes sin to be forgotten' and Rabbi Zadok said: 'Make not of the Torah a crown wherewith to aggrandize thyself, nor a spade wherewith to dig.'" So also used Hillel to say, "He who makes a worldly use of the crown of the Torah shall waste away. Hence thou mayest infer that whosoever derives a profit for himself from the words of the Torah is helping on his own destruction."⁸⁸ It was at a late date that a distinguished rabbi-physician, Simon Duran (1361-1444) was compelled to depart from this rule and accept a salary as rabbi.⁸⁹

The rabbi-physician chose the practice of medicine not only as a means of livelihood but as a favorite occupation because of the opportunity it afforded to devote one's life to good deeds and to become the instrument

of Providence to bring relief. The consequence has been that the words of Ben Sira have reechoed thruout the history of the Jews down to this very day and the physician has been held by them in the highest honor; in this they have been excelled by no other people.

CYESIOGNOSIS.

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Despite remarkable progressive advancement during the last few decades in the diagnosis of pathologic lesions, the multiplicity of modern instruments of precision by which diagnostic accuracy may be attained, and the present perfection of laboratory methods of scientific investigation, the question of cyesiognosis still perplexes the obstetrician,—regardless of his clinical and anamnestic erudition, his diagnostic acumen, his mechanical ingenuity, and his manual dexterity. It may be stated without the least fear of successful disputation that under certain circumstances accurate determination of the existence or non-existence of normal utero-gestation, prior to development of signs which are recognized as positive, remains an utter impossibility; moreover, the citations from older authors embraced herein will amply substantiate the assertion that nothing of practical importance has been added to our knowledge of the subject during the last one hundred years; in fact, the assertion seems reasonable that the modern disciple of Esculapius is little better equipped, so far as cyesiognosis is concerned, than were the venerable "fathers in medicine" two thousand years ago.

At the outset let it be understood that the statements contained herein are in-

⁸⁶ Cited by Chotzner "Hebrew Humour," page 79, and translated from Graetz.

⁸⁷ Graziado Nappi, see Abrahams, "Jewish Life in Middle Ages."

⁸⁸ Ethics of the Fathers. See Daily Prayer Book, with translation by S. Singer.

⁸⁹ Graetz's History, Vol. IV, page 199.

tended to apply to the diagnosis of normal utero-gestation, that they have no specific reference to the various types of abnormal or pathologic pregnancy, *i. e.*, extra-uterine, which includes tubal, the so-called abdominal, interstitial, ovarian, etc., etc. Extended consideration of the latter varieties must be reserved for a future dissertation *dextro tempore*. However, the brief observation may be permitted that, prevailing impressions of text book authors and others to the contrary notwithstanding, at least in so far as the *genus homo femininis* may be concerned, fecundation normally occurs only within the uterine cavity, and whenever the ovum becomes fertilized elsewhere the occurrence should be regarded as accidental and abnormal. In making this assertion the writer is not unmindful of the fact that it is contrary to the teachings of the majority of obstetricians, it being claimed that fecundation normally and almost invariably occurs within the lumen of the ductus Fallopius.

Nothing can be of greater clinical importance than a correct early diagnosis of pregnancy, and the pertinent fact must not be permitted to pass unobserved that there are numerous pathologic lesions the physical manifestations and clinical symptoms of which may so closely simulate those induced by normal utero-gestation that early differentiation may be difficult or quite impossible. The physician occupies a most unenviable and unfortunate position when asked to affirm or disprove the existence of normal utero-gestation, especially when the applicant is unmarried, a widow, or one who positively denies having submitted herself to the process by which a *terrae filius in utero* could have been engendered. He may recognize the characteristic signs of cyesis, and based upon these his conclusion

would naturally be affirmative; yet, confronted with the emphatic denial of the woman that she has been "exposed," and realizing the unreliability of early symptoms, his judgment may be biased and his conclusion therefore negative. On the other hand, the applicant may be a married woman who earnestly desires a child, who firmly believes herself to be pregnant and so declares; or she may be a single woman who has ulterior motives in desiring to be pregnant and swears she is, with the hope of securing medical confirmation thereof. In any event final decision, altho based upon what may at the time be considered sufficient evidence, may be erroneous for the reasons indicated.

It becomes evident that not only does an accurate estimate of the actual condition of affairs concern the physical, mental and moral status of the applicant and her family, but the professional reputation of the medical attendant may be seriously involved should a mistake be made; and be it remembered that errors will continue so long as mortal man remains fallible. In certain instances the legal and social relations of pregnancy possess a deep and painful interest, therefore it would seem the height of wisdom for the attendant to withhold an opinion until reasonable diagnostic certainty can be assured. The majority of mistakes are doubtless made during the early months when the gravid uterus is still within the pelvic cavity. The great Lawson Tait many years ago stated that "unless all the signs of pregnancy are present, the less a physician says prior to four and a half months, the better for his reputation."

It may be interesting to briefly review some of the presumed diagnostic signs, symptoms and tests of pregnancy, with commentaries showing the unreliabilities,

limitations and objections peculiar to each.

- (1) Amenorrhea.
- (2) Nausea and hyperemesis.
- (3) Discoloration of the vaginal mucosa.
- (4) Pulsation in the vaginal and uterine arteries.
- (5) Changes in the nipples.
- (6) Mammary alterations.
- (7) Cervical peculiarities.
- (8) Enlargement of uterus and abdomen.
- (9) Salivation.
- (10) Vesical irritability.
- (11) Increased vaginal secretion.
- (12) Fetal movement.
- (13) Placental and fetal pulsations.
- (14) Serological tests.
- (15) Urinary changes.
- (16) Röntgenoscopy.

Amenorrhea has been thought, from time immemorial, to be a reliable and constant sign of pregnancy. The pertinent facts seem to have been ignored: (a) that menstrual suppression may be due to an infinite variety of causative factors, *e. g.*, phthisis, chlorosis, anemia, overwork, premature menopause, psychic impressions, pathologic lesions, etc., (b) that it has been known since the days of Hippocrates that menstruation may continue despite impregnation, (c) that some females menstruate only when pregnant, (d) that women have borne children without ever having menstruated. Therefore, temporary amenorrhea is only one of the corroborative evidences of cyesis. The mental anxiety of unmarried or widowed females who have secretly permitted sexual embraces, altho conception may not have occurred, is occasionally sufficient to induce menstrual suppression. Exceptionally the menopause may normally occur before the age of thirty years; the menstrual function may be temporarily arrested in the newly married from conjugal excitement, inordinate sexual in-

dulgence, or the fear of early impregnation. Finally, conception is possible (a) before establishment of the menstrual function, (b) subsequent to the menopause, (c) during lactation, and (d) women have been known to regularly menstruate throughout the entire period of normal utero-gestation.

Nausea and hyperemesis have been quite generally believed to represent positive symptoms of cyesis, whereas *per se* these signs have no particular significance. However, the so-called morning sickness occurs in the majority of pregnant women, becoming manifest within a variable period (exact time undetermined) after conception, and generally persisting until "quickening" when it suddenly ceases; or it may continue until accouchement. Only when associated with amenorrhea and other indicative signs should nausea and vomiting be considered presumptive or even corroborative evidence. It must not be forgotten: (a) that nausea is a common accompaniment of numerous disorders to which the human female is prone, (b) that it oftentimes occurs in non-pregnant newly married women, (c) that it may be induced by the excitement incident to the "honeymoon," (d) that it may result from pressure of abdominal neoplasms and other painful lesions, (e) that by no means is it a necessary or constant sign of cyesis, (f) that in many instances it does not occur at any time during normal utero-gestation.

Numerous distinguished obstetricians have emphasized color changes of the vulvo-vagino-cervical mucosa as a pathognomonic early sign of pregnancy. Jacquemin is accredited with first having directed attention to this peculiarity. He claimed the vulvo-vagino-cervical mucosa gradually assumed a violet hue, that the discoloration was not due to pigmentation but to hypertrophy of the venous plexuses, the anterior

vaginal wall being affected. This sign is merely mentioned to suggest its fallibility and inutility in cyesiognosis. It is well known that color changes of the vaginal mucosa are due to venous congestion, and may be induced by many causes other than pregnancy, *e. g.*, manipulation during physical examination, sexual intercourse, pruritus vulvæ, irritation from any sources. The explanation is obvious, *i. e.*, the presence of an unusual quantity of venous blood, and, regardless of the cause of the circulatory disturbance, the phenomenon observed is the same. Therefore the so-called violet color of the vaginal mucosa is not a positive indication of pregnancy.

Another sign upon which considerable emphasis has been placed is pulsation of the uterine and vaginal arteries. Like the foregoing symptom, pulsation depends upon the state of the genital blood supply, and may bear no relationship to pregnancy. Of fifty-three women who had recently become pregnant, pulsation was perceptible in only one-third; on the other hand, the phenomenon was noted in women who were non-pregnant. (Heil). While appreciable pulsation of the uterine and vaginal arteries may in some instances be detected during the later months of normal utero-gestation, it simply represents a circulatory phenomenon which may occur both in the pregnant and the non-pregnant.

In primiparæ one of the most trustworthy early signs of pregnancy has been considered color change in the areola papillaris (from light to dark brown) with enlargement of the accessory sebaceous glands upon its surface; but this sign has no especial significance in multiparæ. During the later months of normal utero-gestation, however, there may be noted even in multiparæ a secondary circle of faint color outside the

original areola, which may be regarded as confirmatory evidence of cyesis. The nipples sometimes become early enlarged, turgid and tender; but as these signs are inconstant and may be due to other causes, they are unimportant as diagnostic features.

Mammary enlargement, tenderness and tingling may be noted soon after conception. The breasts usually begin to increase in size and become firmer in consistency during the second month, but these signs have no early diagnostic value as they are not infrequently noted in the non-pregnant. The presence of milk (colostrum) in the breasts is not a positive sign of cyesis, since this phenomenon has been observed in non-pregnant adult females, in young girls, and in rare instances in males. There are, therefore, no mammary changes positively proving the existence or non-existence of cyesis during the early months, and such signs when present are merely corroborative.

When the cervix is soft and velvety like the lips, the woman is probably pregnant; when it is hard like the tip of the nose, the uterus is most likely empty. (Goodell). Cervical softening may be due to many causes other than pregnancy, therefore this sign has no positive diagnostic value. Early in normal utero-gestation, according to Hegar, there occurs marked thinning and softening of the lower uterine segment, the cervix being tilted backward giving the uterus a "jug-like form." Bimanual manipulation is necessary to obtain this sign, and unless one is expert the information thereby secured will be valueless from a diagnostic standpoint. Little can be said in favor of the procedure in cyesiognosis, and much might be urged against it in inexperienced hands.

Careful physical examination will some-

times reveal enlargement and fluctuation of the corpus uteri during the twelfth week of normal utero-gestation, and in emaciated individuals as early as the eighth week. However, a small cystic uterine fibroma may impart an identical sensation to the examining fingers, and the attendant may be thus misled. Examination may be unsatisfactory if there exist any displacement of the uterus, a superabundance of abdominal adipose tissue, or abnormal genital conformation. While in the absence of tumor or deformity enlargement and fluctuation of the corpus uteri may be legitimately regarded as a positive sign of cyesis, the physical examination requisite to determine the existence of these features necessitates the exercise of unusual care and judgment, and even then diagnostic error is not impossible for the reasons cited.

Alterations in the shape and consistency of the uterus in early pregnancy have been carefully investigated by numerous observers. It has been claimed that at the beginning of the second month one side of the uterus will be found thicker than the other, the larger portion being softer than its fellow, and where the larger soft half joins the smaller and firmer half, a distinct sulcus may be recognized. It is insisted by others that as the position of this so-called sulcus is inconstant, no diagnostic importance can be attached to this sign. Irregular uterine contraction and relaxation in early cyesis have been described, as have also widely varying degrees of asymmetry, consistency, compressibility, and other peculiarities, but when present such signs are not pathognomonic.

General abdominal enlargement with a certain constant definiteness in contour, has been unduly emphasized in cyesiognosis. In the absence of other indicative signs such

changes are without value from a diagnostic standpoint. The abdomen may rapidly or gradually increase in size from neoplastic formations involving any of the intrapelvic or intraabdominal viscera, and it is recognized that pseudocyesis or phantom abdominal tumor is not uncommon. Uterine fibromyomata are probably responsible for the majority of mistakes in diagnosis where abdominal enlargement is the most prominent symptom.

Salivation may or may not occur at any period of normal utero-gestation; when present it is usually associated with hyperemesis. It is an inconstant sign and is entitled to consideration only as confirmatory evidence. There are usually other and more reasonable explanations to be offered for the development of this symptom, and its presence or absence is of little consequence.

Irritability of the vesica urinaria has been found so constant especially in primiparæ during the early part of normal utero-gestation, that some authorities attach considerable importance to this symptom when associated with amenorrhea. However, vesical irritation may owe its origin to a multitude of other causes, therefore it has no particular significance in pregnancy.

Increased vaginal secretion is a common symptom of numerous local and general affections. Its presence cannot be said to have an essential bearing upon the question of cyesiognosis, altho it may be a fairly constant symptom in a certain percentage of known pregnancies.

With the advent of the phenomenon designated as "quickening" (fetal movement perceptible to the woman), there should be no reasonable doubt as to the existence of pregnancy, yet many mistakes have occurred even during that stage. Fetal movement may be appreciable at four and

a half months, but the exact period when it may be expected remains undetermined. In rare instances it has been noted during the twelfth week, in others no motion was felt during the entire period of utero-gestation, yet living children were delivered at term. Reese states that fetal movement is a deceptive sign, that it is purely subjective, and many nervous women (especially those anxious to have children) have mistaken intestinal peristalsis and contraction of the abdominal muscles for fetal motion. Therefore, contrary to the generally accepted opinion, like the majority of the others mentioned, this sign must be regarded as not altogether infallible.

When pulsation of the fetal heart can be distinguished by the attendant upon auscultation, the diagnosis of pregnancy with a living child is unquestionably correct. This may therefore be regarded as the first and only trustworthy objective sign by which pregnancy can be recognized. Fetal and placental pulsations may usually be detected about the end of the fifth month. However, absence of fetal pulsation does not necessarily imply the non-existence of cyesis, since the fetus may be dead, there may be an inordinate quantity of the liquor amnii, an excessive amount of abdominal adipose tissue, the fetal pulsation may be weak and therefore inaudible.

The serological tests which have been recommended in cyesiognosis, and the extensive investigations made along this line by Abderhalden, Fieux, Mauriac, Franz, Jarish, Kolmer, Williams, Goodman, Berkowitz, Petri, and others, are merely mentioned to suggest that intricate and complicated methods of this character are impossible excepting by trained serologists in especially equipped laboratories. It would be as reasonable to expect the average ob-

stetrician or general practitioner to be familiar with the details of the Wassermann reaction in the diagnosis of syphilis, as to understand the proper application of serological tests in cyesiognosis. Moreover, the serodiagnosis of pregnancy, like the Wassermann reaction in syphilis, has been of uncertain value in actual application even in the most expert hands, since characteristic reactions may be induced by other lesions; hence the method cannot be recommended as infallible.

The positive early diagnosis of pregnancy by intricate methods of urinalysis was at one time thought possible by several observers. (Gray, Parke, et al.). For instance, it was claimed by Gray that he had "made many diagnoses as early as ten days after conception!" This test is also mentioned merely to suggest its total unreliability and positive absurdity. The assertion that indicative urinary changes occur during the first ten days of normal uterogestation would appear about as reasonable as the statement of another fanatic, the authority for whose observation has unfortunately been lost or mislaid, that "the subcutaneous injection of blood serum of the pregnant female will produce a typical reaction in the male provided the male so injected be the father of the unborn child!"

The Röntgen ray in cyesiognosis has recently been mentioned by various observers. It is claimed by certain röntgenologists that a positive diagnosis of pregnancy can be made in nearly every instance so soon as the osseous structures of the fetus have become sufficiently well-formed to cast a shadow, an observation which seems reasonable from a scientific standpoint. However, the method can be of no diagnostic value in the early period of cyesis, *i. e.*, before definite formation of the fetal bones. The pro-

portion of instances in which röntgenoscopy will suffice in making the diagnosis of pregnancy does not seem to have been accurately determined.

There are many other symptoms and signs of pregnancy included in the writings of both ancient and modern authors, but their enumeration with appropriate commentaries would unduly prolong this paper without adding anything of value to the sum total of present clinical knowledge.

The principal objective symptoms and signs of pregnancy may be summarized under four general headings, *viz.*, (a) vaginal, (b) uterine, (c) abdominal, and (d) mammary.

(1) Vaginal: (a) Oslander's sign, pulsation of the vaginal arteries, (b) Jacquemin's sign, discoloration of the vaginal mucosa, (c) vaginal ballottement:

(2) Uterine: (a) Goodell's sign, softening of the cervix, (b) Hegar's sign, compressibility of the isthmus, (c) Rausch's sign, uterine fluctuation, (d) Ladiniski's sign, localized circular elastic area, (e) Dickinson's sign, bulging of the fundus and elasticity of the corpus:

(3) Abdominal: (a) Mayor's sign, fetal heart sounds, (b) fetal movement, (c) Hicks' sign, uterine contractions, (d) abdominal ballottement, (e) Kennedy's sign, uterine souffle, (f) umbilical souffle, (g) fetal shock:¹

(4) Mammary: (a) enlargement, nodulation, pain, (b) areolar pigmentation, (c) erectile nipple, (d) venous engorgement, (e) enlargement of Montgomery's follicles.

The following signs are recognized as positive by practically every author who has written upon the subject: (a) fetal

heart sounds, (b) vaginal or abdominal ballottement, (c) fetal movement.

In substantiation of the assertion made early in this paper, that meagre information of value has been added to our knowledge of cyesiognosis during recent years, witness the following items abstracted from the literature between 1800 and 1873. Practically all the signs and symptoms of pregnancy, excepting those obtained by serological tests and röntgenoscopy, were well understood by these early writers.

Bandelocque (1807): Altho for the most part these symptoms (united or separate) offer but probabilities concerning the state of the woman who experiences them, the particular signs about to be described enable us to discover it from the first months and to judge of its species, its different periods, etc. It is by "touching" that we discover these things. It is generally recommended not to "touch" until after the third month, with the expectation of determining a pregnancy, as it is imagined that we cannot discover it sooner; but when we combine other circumstances with the information derived from "touching" we may be enabled to form a judgment that will not lead us into any material error. But as these changes may take place from causes foreign to pregnancy, we cannot strictly say there is any certain sign of it, excepting motion of the child. We have then, before motion of the child is felt, nothing to prove the existence of pregnancy but conjectures more or less founded.

Bard (1819): It is frequently wished, and sometimes may become legally important, to ascertain the pregnant state with some precision; but before the end of the third or beginning of the fourth month, this is hardly possible.

Ryan (1831): The whole of these signs are seldom observed in all cases, and are doubtful and uncertain. If all are present they afford strong proof of pregnancy, but never that positive certainty which enables us to give decisive evidence before magistrates. Ryan concludes that in all cases before the fourth month, the diagnosis is extremely uncertain; that there are no infallible signs of pregnancy, excepting perhaps

¹The so-called *lineæ albicantes* or *lineæ nigrae* are of little importance in cyesiognosis in either *primiparae* or *multiparae*, since these peculiarities oftentimes owe their origin to other causes. Abdominal *striae*, pigmented and otherwise, may occur in women who have neither been pregnant nor the subjects of intra-abdominal neoplasms; they may be non-existent in women who have borne children and also had abdominal tumors.

those afforded by auscultation; that the fetal and placental pulsations when discovered by auscultation are positive proofs of pregnancy. Previous to the application of auscultation it was held by Hamilton, Burns, Male, Beck, Smith, Gooch, and others, (1823-1829), that there was no infallible sign of pregnancy in the early months.

Maygrier (1834): While this author emphasized the unreliability of all the so-called early signs of pregnancy, he stated that at the end of the fifth month the existence of cyesis might be ascertained with certainty.

Velpeau (1838): Such is the series of sympathetic phenomena noticed in pregnant women; it has been said they are numerous; but, unhappily, every one of them may exist without the patient being pregnant; while on the other hand pregnancy often occurs without giving rise to them. Upon the whole the rational signs, when united and properly weighed, most commonly suffice to make us believe in the existence of gestation, but never to warrant us in affirming it before a court, even tho in addition to these there should be a suspension of the periodical flux. As to the odor of the perspiration, the state of the urine, the color of the nipple and areola, the size of the neck, the changes in the aspect of the face, etc., their existence is too variable, too fugacious, or depends upon too many different causes, or they are of too difficult determination to permit us to repose the least confidence in them. It is not until the latter half of gestation that we obtain positive evidence which can neither be simulated nor evaded. The only sign, indeed, which can be regarded as itself proving that the woman is pregnant of a living child is pulsation of the fetal heart. Under all circumstances the diagnosis of pregnancy must ever be difficult and obscure during the early months; the development of the uterus is still inconsiderable, and the effects which it may have produced upon the system, altho appreciable and even distinct, are, nevertheless, too capable of being also produced by other causes, to warrant our drawing any decided conclusions from them. Four symptoms are regarded as perfectly diagnostic of pregnancy, and in the accuracy and certainty of these we may place the fullest confidence. Two may be recognized at an early period by means of auscultation,

viz., the sounds produced by the movements of the fetus, and by the pulsations of its heart. The other two are not appreciable until a later period, and are afforded by manual examination, *viz.*, being able to feel the head of the fetus per vagina, and its movements thru the abdominal parietes. (Rigby, 1841).

Lee (1844): In the greater number of cases the diagnosis of pregnancy is impossible before the end of the fourth or middle of the fifth month; and even then if the sound of the fetal heart is not heard, and all the symptoms of pregnancy are not present, and have not occurred in the natural order, the greatest caution is required in delivering an opinion.

Moreau (1845): No one sign can determine a recent conception to a certainty; the existence of pregnancy cannot be infallibly determined by the so-called rational signs; the signs afforded by inspection are insufficient; pregnancy can alone be determined by the audible and tangible signs appertaining to that condition.

Churchill (1846): The only sign, indeed, which can be regarded as itself proving that a woman is pregnant of a living child, is the pulsation of the fetal heart.

Gooch (1849): Some practitioners have said that you can discover the presence of a fetus after two months, but it cannot be done so early as this. Dr. William Hunter stated that examinations could not be relied on with confidence even during the first four or five months.

Hewitt (1872): The certain signs of pregnancy are: the active movements of the child unequivocally felt by another; the presence of the child in utero ascertained by ballottement; the sounds produced by the pulsations of the fetal heart. No positive opinion can be expressed if none of these signs be discovered, however strongly the observer may feel inclined on other grounds to give his final decision.

Cazeux (1873): On the whole, then, there is no certain sign of pregnancy during the first three or four months. "In fact, I do not believe the diagnosis is possible, except at a very advanced stage."

A few cases coming under my personal observation within the last year or two in which mistakes in diagnosis were made, may be of sufficient interest to warrant their being briefly recorded.

Case 1.—A woman of forty-five, a widow for nineteen years and a grandmother, presented for examination because of what she supposed to be an abdominal tumor. Upon investigation there was detected within the abdominal cavity a decided tumor-mass. On account of her age, the history and her conduct, I did not at the time consider the possibility of her being pregnant. However, as there was some doubt in my mind as to the exact nature of the abdominal tumor, she was referred to a prominent surgeon. After a careful physical examination he made the diagnosis of a small uterine fibroma, and advised immediate operation. Upon being informed of his opinion the patient concluded to defer operation until she could secure the opinion of another surgeon. This was later done, and the diagnosis of the first surgeon was confirmed. Immediate operation was undertaken, and when the abdomen was opened the woman was found to be about five and a half months pregnant!

Case 2.—A married woman of twenty-three, mother of one child, presented the history of having had "uterine trouble," but stated that her menstrual periods had been regular. Upon examination she was found to have considerable erosion of the cervix, and there was also slight displacement of the uterus. Not suspecting that she might be pregnant, and especially as it was believed she was honest in her statement about her menstrual history, I made an application of ichthyol to the cervix and inserted a vaginal tampon of wool. The following day I was hastily called, and found she was having a miscarriage. The pregnancy had evidently advanced to about three months.

Case 3.—A woman of twenty-four, married two years, presuming herself to be pregnant, had engaged me to attend her in the expected confinement. All her preparations had been made, including the employment of a nurse, making the baby's clothing, etc. I had examined her urine a number of times during the supposed pregnancy, but had neglected to make a thoro physical examination, or even listen for the fetal heart sounds. All the usual signs of pregnancy were present. When she thought she had arrived at term, I was called and found her apparently in labor,—at least she was having severe abdominal pains. She had telegraphed to a distant city for her sister, and

the house was filled with neighbors. Upon making a careful physical examination preparatory to the beginning of labor, I discovered that she was not even pregnant. This was a case of what is known as pseudocyesis or phantom abdominal tumor.

Case 4.—A girl of sixteen years, an unsophisticated country maiden, living remotely from a railroad station and who had been attending the country school, was brought to my office by her aunt with the history of having had several pulmonary hemorrhages. The girl was very fleshy and appeared overdeveloped for one of her age. Upon careful examination I was able to detect nothing abnormal about her lungs. She was presumed to have had vicarious menstruation; that is, each time for several months when she should have menstruated, she had managed to expectorate blood in considerable quantity, which I afterward discovered came from her gums. I suspected pregnancy, and to be certain of the diagnosis, the aunt was requested to prepare the girl for a thoro vaginal and bimanual examination. She was informed that if I found myself mistaken upon attempting to make a vaginal inspection, I would immediately desist. They readily assented to this plan of procedure, and the examination was made accordingly. No trouble whatsoever was experienced in introducing my fingers into the vagina, and it was discovered that the uterus contained a fetus. The girl was then evidently about six months advanced in normal uterogestation, but being fleshy, the abdominal enlargement was hardly noticeable, and I was at first further misled by her youth and apparent innocence or ignorance. In order to fortify myself against possible future legal complications, Dr. L. S. McMurtry was asked to see the patient with me and confirm the diagnosis. I thought the girl might be spirited away, and, after getting rid of the fetus, seek recourse against me for misjudgment or error in diagnosis. Dr. McMurtry readily agreed that she was pregnant, and the relative (an old maid) who brought her to Louisville was so informed. The girl was allowed to go home with the understanding that she would be returned to Louisville at the proper time for delivery. This was done, and at term I delivered her of a ten-pound baby!

The foregoing cases illustrate how easy it is sometimes to be mistaken in the diag-

nosis of pregnancy. Excepting in cases of extrauterine gestation, it seems unwise to follow the ancient teaching that "delays are always dangerous." From my own experience, and from observations in the practice of other physicians, I think it would be well to adopt the slogan "safety first" which now seems to be so popular, and practice watchful waiting in all cases of suspected normal intrauterine gestation.

A NEW THEORY OF RICKETS.

BY

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One of the chief difficulties in connection with understanding the true pathogenesis of rickets lies in the fact that we have no clear definition of the term. Some authorities would confine their conception of rickets to the characteristic bony deformities, others include under it a large number of general symptoms such as muscular debility, catarrhal states, increased excitability of the nervous system, sweating and digestive disturbances in addition to the actual osseous lesions. In this article I propose to offer an explanation of the pathogenesis of rickets on the assumption that the essence of the disease lies in the osseous lesions, and that such other symptoms as may make up the generally accepted clinical picture of the disease merely represent the concomitant and incidental effects of the various morbid processes, which lead to one common goal namely the production of an

acidosis—the acidosis itself being the responsible factor in the dystrophy of the bone. Until we have some unanimity with respect to the range of symptoms which are to be included under the term rickets, it is hopeless to expect agreement with regard to the pathogenesis.

One of the most remarkable features of the disease is that its characteristically active manifestations are confined almost entirely to one particular period of life, namely, between six months and two years of age, altho its effects may last thruout life.

It seems hardly possible that the pathological processes on which the so-called rickety symptoms depend, can be exclusively confined to one period of life. On general principles it is far more probable that they occur at all periods of life but do not always produce these characteristic results, because the osseous tissues on which their incidence falls are not in an appropriate state to give rise to the typical reactions.

There must be some good reason why the child of two years of age loses his more conspicuous rickety symptoms. The late Dr. W. B. Cheadle used to explain this subsidence on the ground that at this age the child commences to walk, and thus being able to approach the dinner table, automatically expands a diet heretofore monotonous and restricted. This dietetic explanation is not altogether convincing.

When a child hitherto suffering from rickets is fortunate enough to reach the ambulatory stage, he introduces into his life a new outlet for energy, which is vastly greater than all others combined. It is quite true that even the youngest baby is never quite motionless and is constantly calling some muscular activity into play, but the actual number of foot-pounds of work

performed are enormously increased the moment the child "finds the use of his legs." The rickety child either walks himself into health or dies on his back from some inter-current disease such as bronchitis, diarrhea, or eclampsia. I have seen more than one child done to death by being compelled to wear splints and lead an inactive existence in order to save his legs.

Speaking generally, I regard rickets¹ as an expression of a want of adjustment between the supply and the demand for food.

Every individual, whether he be man or child, has a definite requirement for food; the number of calories he will require in the twenty-four hours will depend on the work he performs, on the amount of heat he must produce to maintain his bodily temperature, on the rate of growth, and on the quantity of the secretions he must elaborate to carry on the organic functions. If the supply of calories is less than his requirements, the output will be restricted in some direction, while if the supply is excessive, the excess will be disposed of in some way which will be pathological, since it does not fulfil any useful or physiological purpose. It is unnecessary here to refer in detail to the manner in which the output is restricted in cases of starvation, but stated in general terms the restriction will take effect in those directions which inflict least damage on the organism as a whole, that is to say, which interfere least with the prospects of life.

On the other hand when more food is consumed than is required for the necessary and physiological purposes of life the excess will be disposed of in a variety of ways, but always in that manner and by those means which are least injurious to the body.

The following are some of the ways in

which the organism can deal with excess of food.

- (1) By removal from the body by diarrhea or vomiting.
- (2) By fermentation or decomposition in the bowel with the production of gaseous, acid, or other irritating bodies which are voided from the system in various ways.
- (3) By storage in the body in the form of fat, glycogen, connective tissue or neoplasm.
- (4) By expulsion from the body in a completely unoxidized form. For instance, in the form of sugar, albumin, mucus, or fat.
- (5) By removal in the urine or other excretions in the form of semi-oxidized products of combustion,² such as lactic, butyric, propionic, uric, glycuronic or oxalic acids in combination with basic elements.
- (6) By removal in the form of completely oxidized end products, namely, as carbonic acid, urea, and water.

Most of these methods of disposing of an excessive intake of food entail certain inconveniences or inflict injury on the body, even tho the less harmful expedients be adopted. One of the most injurious methods, but one adopted only as a last resource, is that of semi-combustion. If the furnaces of the body are overstoked, and especially if the supply of oxygen is restricted,³ the combustible material will be only half burnt up with the production of acid bodies of large molecular size. Since nature abhors acidity almost as much as she dislikes a vacuum, these acid bodies will be neutralized at the expense of basic elements, such as calcium, magnesium, sodium, iron, and ammonium, which are withdrawn or more correctly speaking withheld from organic combination. The withdrawal of these valuable bases is that which constitutes one of the gravest of the dan-

gers of an acidosis, and the chief cause of the defective mineralization of rickety bones. If bases such as calcium are required for the important purposes of neutralizing poisonous acid radicles and thus saving the life of the rickety child they cannot at the same time be employed for the purpose of mineralizing the cartilaginous basis of growing bone, hence the softness and want of rigidity of all osseous tissues including the teeth developed during the period of an acidosis.

Evidences are nearly always to be found in the rickety child of disposal of excess of food by other means than the fatal one of semi-oxidation; less harmful ones are nearly always resorted to in the first instance. Storage of excess is often evidenced by the fat, heavy appearance of the child in the early stages of rickets. Proof of attempts to grapple with the excessive intake by increased combustion is often afforded by various evidences of undue heat-production. To dissipate this heat and thus obviate a rise in the bodily temperature, blood is brought to the surface of the exposed parts, notably the face, hence the flushed cheeks. The head and the back of the neck are, under these circumstances, usually bathed in copious perspiration. When these means fail to dissipate the large amounts of heat produced, fevers, chills, and dislocations of the heat-regulating mechanisms follow. Diarrhea, vomiting, eczematous oozings, and mucous discharge are common results of the same conservative efforts, while glycosuria, albuminuria, phosphaturia, lithemia, and oxaluria are not infrequent evidences of other pathological means of disposing of food which is beyond the physiological requirements.

The great majority of these symptoms

are common to all periods of life, but even when present in multiple combination they do not necessarily constitute rickets in the usual acceptance of the term, unless they are also accompanied by the pathognomonic bony changes. My view is that these inevitable results of an excessive intake of food are operative at all times of life, but we do not call such a syndrome of symptoms rickets unless they occur in the growing child at a time when the consequences of an acidosis, and the withholding of mineral matter from cartilaginous foundations, make themselves conspicuously obvious by interfering with the normal development of the skeletal system. Inasmuch as the supply of food can never assume any high degree of excess during intra-uterine life, foetal or congenital rickets must be rare, just as it must be comparatively rare during the early days of extra-uterine life, because time is required for the manifestation of the more serious results. Rickets tends to disappear after the second year, because at this time a grand safeguard against relative excess of feeding is introduced by the development of ambulatory powers.

Any diet, no matter how exiguous, may become relatively excessive if the outlets for energy are sufficiently restricted. If the child creates no demand for food by the display of physical energy, if he creates no demand for heat because he is kept artificially warm by excess of clothing and confinement to warm rooms, and if he creates no demand for the purposes of growth, it is quite possible that he may be relatively overfed, tho the daily ration does not reach or exceed an average amount.

Any diet previously physiological becomes relatively excessive the moment the output of energy is restricted. The various conditions which can limit the output

have been chronicled many thousands of times in the etiology of rickets. But, as far as I can see, heretofore, it has not been recognized that the one common operative factor running thru all the etiology of rickets is the restriction of the output of energy, by the infliction of injuries on the mechanisms of the body. Every injury, from whatsoever cause arising, which impairs the efficiency of the body as a working machine or which limits the output of work, will restrict the physiological demand for food and render what may be otherwise a physiological dietary relatively excessive. There is no more striking illustration of how an injury can restrict the physiological use of food than that which is provided by the metabolic incapacity of the diabetic patient, whether this metabolic fault be due to nervous causes or to pancreatic insufficiency.

The case of the rickety child is by no means unlike that of the diabetic patient; I believe, in rickets, sugar tolerance⁴ is always restricted tho not to the same extent that is usual in diabetes.

It is impossible to explain the exact manner in which the many injuries inflicted on the rickety child will limit the output of work, and consequently restrict the demand for food. I can only give here a few examples which will help the reader to understand the general problem.

Injuries are inflicted on organic mechanisms by understimulation, as well as by over-stimulation, in the first case by suppressing development or leading to atrophy, and in the second place by inducing fatigue or entailing hypertrophy. At first sight it may not be obvious why any hypertrophic development or atrophy of organs should impair the efficiency for work of the human machine, but a little reflection will prove

that the general statement is true. Take, for instance, the case of the thyroid gland, both hypertrophy and atrophy of this organ upset the equilibrium of the body as a whole, impair the health, and limit the capacity for doing useful work; so, too, does hypertrophy or atrophy of such organs as the stomach and the heart interfere with health in various indirect ways.

If each accepted etiological factor of rickets be examined separately from this point of view it will be found that its influence as a causative agent of the disease may be explained on the ground that it inflicts some injury on the body thru over-stimulation or under-stimulation, thus impairs the capacity of the machine for doing work and finally disposes to an acidosis.

Inasmuch as the muscles are the great users of food and generators of kinetic energy, thus constituting the great spending department of the body, it is to them that we naturally turn for an explanation when the physiological demand for food shows a serious falling off. In nearly all cases of rickets there is evidence of muscular debility or want of tonus, in other words of incapacity to work.

What are the particular injuries in any given case of rickets that are inflicted on the muscular system by the etiological factors in the environment? Broadly stated they represent those which follow from want of muscular development, or from suppression of function. It must be remembered that without its nervous connections the muscular system is completely deprived of capacity to exercise its activities: it can neither do work nor maintain tonus. All injuries therefore which impair the nervous control of the muscular functions will deprive the body of its great outlet for energy, and cause a shrinkage in the food

requirements, and thus if the supply is maintained finally lead to that condition of relative overfeeding which in the final issue produces the dangerous condition of acidosis.

The nervous system, in common with all other parts of the body, is damaged by over-stimulation, which induces fatigue, and by under-stimulation, which leads to suppression of development or to atrophy. The nervous system of the child who lives in the kind of environment that predisposes to rickets is exposed to faulty stimulation of both kinds, from want of stimulation in certain directions, and from over-stimulation in others. A little consideration will show that the conditions of town life in the slums clearly provide for both these alternatives.

The nervous system of a child thus environed suffers not only from faulty stimulation, but it is often so damaged by circulating poisons that it is unable to respond to any form of stimulation in any way at all. The most serious injuries inflicted by circulating poisons are those due to endogenous manufacture. Faulty feeding, whether in respect of quantity or quality, will ultimately lead to disturbances of digestion and to the production of an intestinal toxemia. The poisonous bodies thus produced damage the delicate nerve-cells but the exact nature and extent of the injury inflicted will depend partly on the rapidity with which such bodies are removed from the circulation by the excretory organs, and partly on the efficiency of the liver as a de-intoxicating or scavenging agent. It is not difficult to find among the conditions which surround the rickety child many influences which adversely affect the development and efficiency of the liver and other excretory organs.

Infective diseases, both chronic and acute,

will similarly depress neuro-muscular functions by the direct influence of the toxins generated, and thus limit the output of energy. Thus we see that there may be a great number of factors in the environment of the child with rickets which may account for depression of function, and especially of muscular function, and may explain why such a child is exposed to serious risk from relative overfeeding unless the diet is kept very low.

The clinical picture of florid rickets is a composite one. Some of the most familiar features are due to the causes which finally lead to the acidosis, others are due to the acidosis itself. On the other hand some of the symptoms, erroneously I think, attributed to rickets, may simply represent the calling into play of mechanisms which are essentially protective in character and designed to obviate the production of an acidosis and all the attendant evils. The nature of other symptoms may be equivocal, for instance the obesity often associated with the disease may simply represent a physiological storage of excess, or it may be due to some constitutional lipodystrophic idiosyncrasy. The sweating may be due to some vasomotor disturbance, or it may represent the calling into play of a physiological mechanism to compensate for undue heat production. The nervous symptoms which are so characteristic of the disease, may be due to one of the causes which predispose to acidosis or to the results of the acidosis. The bony deformations⁸ for the most part are consequent on the demineralizing action of the acidosis. But the enlargement of the epiphysis, which, I believe, represents the compensatory activity of the blood-forming centers, may be consequent either on the acidosis, which itself leads to the destruction of red-blood cells, or on some other hemolytic influence, such

as a bacterial infection, which may also predispose to acidosis. In fact the clinical picture of rickets is difficult to interpret since each one of the component features may itself be due to so many different causes. Since its causes are so varied and multiple, there cannot be any one single line of treatment, but underlying all lines of treatment, the general principle should be observed of adjusting the supply of food to the actual output of energy. In the general management of rickets,⁶ both prophylactic and remedial, it is more important to create an increased demand for food by increasing the output capacity than by reducing the supply to meet the physiological needs of a small demand. I would, therefore, conclude as I began by saying that if the term "rickets" is restricted to the bony lesions the disease is caused by a condition of acidosis engendered by a great many different environmental causes, but in the final analysis by the production of a condition of relative over-feeding during the period of most active growth in bone.

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ADENOMA OF THE RECTUM.

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Introduction.—At the anus and within the pelvic portion of the colon there develops a variety of tumor growths benign and malignant between which the distinction is not always clear. There are many borderline cases and certain tumors which tho not themselves destroying life may cause much misery thru constipation, intestinal obstruction or intussusception besides ulceration and hemorrhage and may in time undergo malignant transformation. Of 42 such cases collected by Quenu and Landel 20 of them ended as true cylindrical carcinoma. These rectal tumors are of different anatomical structure but each resembles the tissues from which it springs. All rectal tumors incline toward the direction of least resistance and therefore protrude into the lumen of the bowel. Once the mass extends into the intestinal canal it is dragged upon by the passing fecal current and by the straining incident to defecation until its attachment is drawn out into a slender cord or pedicle and a polyp (or polypus) is formed.

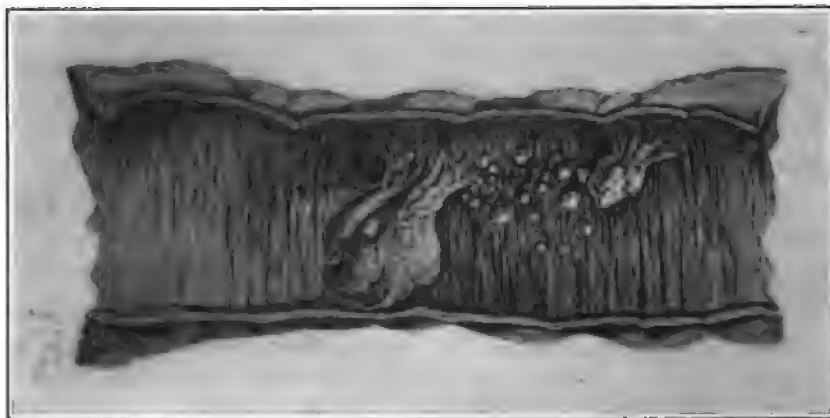
The adenoma is the most frequently found benign growth in the bowel and it is furthermore found in the rectum more often than in any other part of the intestine. Adenomas develop from the mucous and submucous coats of the bowel. The majority of rectal polypi belong to this class and rectal adenomas are so often referred to as polypi that many practitioners consider the terms synonymous. Such however is not the case. All polypi are

not adenomas, neither are all adenomas polypi. Adenomas undergo hyaline, myxomatous or cystic degeneration but do not develop metastasis. They are found at all ages altho those occurring in children differ very much macroscopically, microscopically and clinically from those present in adults. Two different types of adenomas exist. The single adenoma with the long pedicle usually found in children and the multiple adenoma having broad attachments and usually found in adults.

Single Adenoma.—In children there is usually a single adenoma or at most but three or four varying in size from that of

in children under twelve years of age altho it is sometimes met in adults.

The single polypoid shaped tumor occurring in children may be extruded only during acute digestive disturbances accompanied with powerful peristalsis and tenesmus. At other times when retained within the bowel trying to expel it, the pedicle becomes a disturbance with diarrhea. On examination with the proctoscope the adenoma will often drop into the lumen of the instrument and may be easily removed with a snare rather than clipped off with scissors as by the slow crushing of the snare the intima of the vessels is crushed and there



MULTIPLE ADENOMAS IN SIGMOID.

Note broad base dragging down the deeper coats of the bowel.

a cherry to perhaps that of a hen's egg, each with a slender pedicle which may measure up to six inches in length, depending upon the size and age of the tumor. If the mass has been dragged upon for a long while, by the bowel trying to expel it, the pedicle becomes stretched and attenuated. The tumor itself much resembles a red raspberry in appearance. It is oval shaped, bright red, with a rough surface and consists of a preponderance of connective tissue with a small amount of glandular and epithelial structure. This type of adenoma usually occurs

is less danger of hemorrhage resulting. The small stump of the pedicle soon atrophies completely and needs no further attention.

Multiple Adenomas.—Multiple adenomas usually occur in adults but sometimes in children. In the latter, two, three or even four separate adenomas may be found with slender pedicles but such a condition is exceptional of the simple adenomas. The clinical course of the single adenoma with the long slender pedicle is entirely different from that of the multiple adenomas with

the short thick base and moreover the single adenoma of childhood never develops into the multiple adenomas of adult life. The cause of these tumors is not known altho very interesting theories have been advanced. For example, Huber of New York has attempted to show that these tumors are a result of a general systemic lymphatic hypertrophy. The sigmoid and rectum are most frequently affected altho when the tumors are spread over a wide area the whole colon may be affected. There may be several tumors clustered together in one patch of the bowel and a second collection farther up with an intervening portion of healthy mucous membrane between them that is uninvolved. The sites most frequently affected are those at which the feces are accustomed to be arrested and because of this fact it is thought that local irritation and infection by the feces is an exciting cause. The multiple adenoma are not confined to the rectum but may affect the whole colon. Fink believes that they begin in the rectum and gradually multiply upward. There is a great variation in the gross appearance of these. In a case seen by the author an illustration of which is here shown a number of tumors were found. The largest one was about the size of a hen's egg, the upper one was as large as a good sized strawberry, and the small ones between these two were the size of green peas. There were also a number of masses which were palpable in the mucous membrane but do not show in the picture. In this case the surface of tumors were smooth but irregular like the surface of a potato. Other observers have reported cases the surface of the growth being like a mulberry. Such masses very much resemble villous tumors. The consistency of the adenoma varies

much with the proportions in which the connective tissues and the epithelial structures are found. Tuttle believes that the harder the tumor the more likely it is to undergo carcinomatous transformation. The pedicle is composed of mucous membrane, areolar and fibrous tissue and blood vessels and is usually short and thick; never so long as is that of the single adenoma.

Symptoms.—There are four prominent symptoms in all cases of multiple adenoma namely, diarrhea, hemorrhage, pain and exhaustion.

The diarrhea which resists all astringent remedies to control is accounted for in part by an associated proctitis or colitis which always is present. The stools are small and contain mucus and also fresh and old blood. If there is much decomposed blood the evacuations are black and disgustingly foul. Occasionally an evacuation may consist wholly of mucus or blood. The pain differs in degrees but is somewhat diagnostic of the location and size of the tumor. Adenoma in the colon, sigmoid or upper part of the rectum occasion tenesmus and colic, but those in the ampulla or lower rectum may not cause pain unless they are so large as to cause obstruction. If that occurs the pain is severe. Prolapse of the rectum may be caused by these growths.

Diagnosis.—Whenever a diarrhea persists longer than a few days a local examination of the rectum and sigmoid should be made, when adenoids if present will be felt or seen. The subjective symptoms tenesmus, colic, diarrhea and hemorrhage indicate somewhat the degree of inflammation and obstruction caused by the tumors. Sometimes these growths can be felt in the colon by abdominal palpation. Adenoma which have undergone carcinomatous change have a peculiar indurated base, pro-

duce a foul discharge due to the breaking down of the tissues, and the ulcerated portion may be seen thru the proctoscope. When several tumors exist some may be benign while others are cancerous. Tuttle says "The chances are that in about three out of four cases of multiple adenoma malignancy occurs in some of the growths sooner or later." On digital examination the several tumors may be felt. These may vary greatly in size some being as small as a pea and others may perhaps obstruct the lumen of the bowel. Some may have pedicles and others not. The small tumors are soft but the larger ones are firm as a result of inflammatory or carcinomatous change.

Treatment.—The treatment of adenoma within the large bowel is very unsatisfactory. Diet has no effect on the diarrhea or discharge, and astringent drugs except huge doses of opium are utterly unable to control the symptoms more than temporarily. Surgery offers the only relief.

If the tumors are low in the rectum and but few in number they may be excised singly thru the speculum. An elliptical incision should be made thru the mucous membrane down to the deeper coats and the edges closed with fine catgut sutures. By so treating the base there is no danger of cutting thru an invagination of the peritoneum should that be present as might occur when using a snare or a crushing instrument. The wound edges must be carefully approximated to assist prompt repair as otherwise an ulcer may result, and in these epithelioma frequently develops.

If there are many tumors in the case at hand and we are not satisfied that all can be removed, either because of their great number or because of the high situation of some of the adenoma, it is better not to ex-

cise any but rather to remove the whole diseased area by resecting that part of the bowel. If the tumors extend into the sigmoid or colon a resection must be done, and that part of the bowel above the region invaded by the tumors is brought down and joined to the lowest loop of the sigmoid. Where the tumors extend above the sigmoid they are liable to be found in any part of the colon and an artificial anus preferably on the right side may be necessary to provide physiological rest to the pelvic colon and rectum. This temporary side-tracking of the fecal current however will not cure the disease and the affected part of the colon must be removed later. Lilienthal removed the whole colon in such a case with a very satisfactory result. That of course is desperate surgery but is warranted in view of the danger of malignancy.

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THE BIBLICAL SANITARY CODE TO PREVENT THE SPREAD OF CONTAGIOUS DISEASES.

BY

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In these days of advanced medical science we consider isolation the most important and effective means to prevent the spread of contagious diseases. By this simple sanitary process we are able to reduce the number of contagious diseases and their subsequent high rate of mortality. Epidemics are less frequent and less mortal. If isolation had been practiced in the past, the various plagues that decimated mankind would have been checked ere they extolled the high sacrifice of millions of human lives.

The practice of isolation as a municipal, or state institution is only of recent origin probably not older than half a century altho the system of quarantine can be traced to the 14th century. The Italian government had first adopted the system of quarantine against the merchant vessels that came from areas in which contagious diseases are prevalent. The vessels then were detained for 40 days before they were permitted to land. This system is in vogue today in every civilized country and is the most efficacious means to prevent the transfer of contagious diseases from one country to another. This is of course an international medical problem solved on a rational basis. The problem of preventing the spread of contagious disease within the city is solved on the principle of isolation. Quarantine deals with international while isolation deals with state and municipal problems. The system is in the hands of a properly constituted board of health.

By isolation we understand the separation of an infected individual or an individual presumed to be infected from those likely to suffer from infection.

The term isolation includes under its comprehensive meaning, detention and segregation.

Detention is practiced where the contagion is not well established or until a definite diagnosis is made when a more definite procedure is formulated. Isolation is practiced where the contagious element is definitely known. Segregation is a form of isolation for an indefinite period as practiced in cases of leprosy.

In dealing with contagious diseases isolation is applicable in three periods or stages of the infection. *First*, during the period of incubation. *Second*, when the individual is actually suffering from a contagious dis-

ease. *Third*, the convalescing period when the individual is still liable to transmit the infection to others. The authority for carrying out these principles is vested with the health officers of the community.

While the system of isolation which we consider the acme of hygienic advancement is only of recent development the biblical student cannot fail to trace this process back to the ancient Hebrew nation.

The first nation to recognize the value of isolation as a means to prevent the spread of infectious diseases was the Hebrew nation. In the sacred record of the ancient Hebrew nation we find a complete and efficient system of isolation which differs from our modern system only in the details of procedure and mode of expression. The principle in general is the same. There is sufficient reason to believe that contagious diseases were common among the Hebrews especially during their nomadic period, and it was a part of wisdom of the great law giver to so regulate the mode of life of the people as to minimize their danger. There are of course numerous hygienic rules in the Bible pertaining to personal hygiene; our concern however is with municipal sanitation.

The object of biblical moral and hygienic precepts seems to be the health of the community, to live long and prevent disease. Time and again do we read that the precepts and ordinances are given in order that "your lives may be prolonged." "Choose ye life" is the slogan of the Torah.

There can be no doubt that the simple life advocated by the Hebrew law giver is conducive to longevity. Restrictions tho occasionally difficult to see their rationality, have an influence for the physical good of the individual and his progeny.

The subject of uncleanness receives

considerable attention in the Bible. There is a physical as well as a moral uncleanness; both are expressed by one term, namely, Tomeh.

Tomeh is the official or technical term to denote some contagion or unclean element. This term is employed to express moral religious and physical uncleanness. Physical uncleanness was considered dangerous to life as can be seen from the warning given by the law giver "Thus shall ye separate the children of Israel from their uncleanness that they die not in their uncleanness" (Lev. xvi-31). This clearly indicates the dangerous nature of physical uncleanness. This rule has special reference to the contagious diseases (Nega Zoraath) that require isolation. We use the term contagious in reference to some biblical conditions advisedly because in many forms of biblical uncleanness we find it expressly stated that whosoever comes in direct contact with the uncleanly becomes officially unclean.

Isolation as practiced in the ancient Hebrew Commonwealth and as found in the Bible is especially conspicuous in reference to a certain group of diseases of the skin known as Zoraath or Nega Zoraath. The word NEGA means touch and indicates a contagious element transmissible by touch and stands out prominently in contra distinction to the word MACHLA which denotes sickness.

In this paper we shall not attempt to analyze the various types of Zoraath and classify them according to modern nomenclature. On the one hand this is impossible as the various terms used are not intelligible to us, on the other hand it is of no importance to us to know the type of disease that required isolation. The essential thing for us as far as this paper is concerned is

to show that isolation was practiced and its principle was recognized.

This, however, may be said, that it is apparent from the text that isolation was practiced chiefly in diseases that have some skin manifestations and gonorrhea. It is also of considerable interest to mention the fact that the principal diseases for which we practice isolation today have skin eruptions for their main diagnostic feature such as small pox, scarlatina, measles, erysipelas, leprosy and we may include syphilis.

The point of interest to us is the usual mode of procedure in biblical isolation. It is well to mention the fact that the Bible is not a text book on medicine and the subject presented is merely from the legal and sanitary point of view. The biblical law is in form of instruction to the health officer as to his duties in these cases.

From the way the text is given in the Bible one must come to the conclusion that there must have been a legally authorized body of municipal officers to deal with such cases. Aaron and his sons, the priestly family, were according to the text the first health officers of the Hebrew nation. (Lev. 13-2).

Infectious diseases with skin manifestations were reportable to the sanitary officers who had to decide what disposition should be made of the case Wehovu el Hacoheh (Lev. 14-2) means that he was reported to the priest or officer and not as usually translated "he was brought before the priest."

The priest after being notified went to investigate the case and if the diagnosis was clear and there was present a contagion the case was considered dangerous and was officially declared infectious or Tomeh and he was at once isolated in a special place outside the city gates. This place

was popularly known as Mokom Tomeh. Later, however, it became known as the Beth Hachofshith Mezoraath or as the Targum has it Beth Segurutha literally translated isolation house. Mokom Tomeh can only mean a special municipal institution at some special point outside the city or camp. The English equivalent for Mokom Tomeh is the pest house, a term still in use today in many places. The ordinary translation of Mokom Tomeh, an unclean place, has no meaning. It only becomes intelligible when we think of it as a definite place for special purposes.

In disposing of the leper we find an interesting procedure which, however, in the English version of the Bible is practically meaningless and unintelligible. The English version is: "And the leper in whom the plague is, his cloth shall be rent and his head bare and he shall put a covering upon his lip and shall cry unclean, unclean." There is no meaning in this sentence. A man cannot keep his mouth covered and cry unclean, unclean. Again supposing the infected is mute or a child unable to talk, what then? The leper according to Bible was isolated outside the city. Why should he go about crying unclean with no one to hear him? Besides there would have to be a watchman to see to it that the leper carries out the order and really repeats the formula Tomeh, Tomeh all day. There is apparently some mistake in our translation and interpretation of the sentence. It should be remembered that Moses attaches great importance to this subject and it is reasonable to suppose that he provided for the carrying out of his orders. The Hebrew word Jaathe probably means a sign upon which was inscribed the words Tomeh Tomeh which was attached to the leper. This was a municipal provision to keep

strangers away, something similar to our own practice of placing a placard at the door so as to warn the people against entering.

Isolation was practiced for other conditions but the sign or placard was employed only in the so-called cases of Zoraath.

When the diagnosis was clear and there was present a contagion the man or woman was declared Tomeh; he was at once transported (means of transportation is not given). When the disease was not contagious he was declared clean and permitted to follow his usual mode of life.

DOUBTFUL CASES.

Where the diagnosis was doubtful he was placed under temporary isolation or rather detention for the period of seven days when the officer or priest came to make another examination. If the changes after the first seven days did not warrant a definite diagnosis he was kept separated for seven more days after which time in nearly all the cases a definite diagnosis was made. He was either declared Tomeh and sent outside the city to the isolation camp or he was found clean, free from contagion and set free. Detention was thus practiced for not less than seven and not more than 21 days.

WHAT HAPPENED TO THE LEPER IN THE ISOLATION CAMP.

Zoraath was considered a curable disease and when the affected was cured he reported again to the sanitary officer who went out into the isolation camp to examine him. (Lev. 14-3). It is not stated in the text who reported to the officer of the priest, but since the leper could enter the

city it is reasonable to assume that someone specially appointed for the purpose of guarding the camp reported the case. As a matter of fact there were watchers in charge of the camp and they were known under the name of Shearim or Gateman (King ii-7-10). It is possible that the men who watched the city gates also had charge of the camp which was outside of the gate.

When the priest found the infected cured he was removed from the camp into the city after a religious public ceremony had been performed and he was detained for seven more days ere he was permitted to return to his house. I suppose this was done with the intention of making sure that there was no recurrence. The text does not say where he was placed during these seven days, but there must have been a municipal building where he was taken care of during these seven days. The Midrash in fact, claims that there was a LISHCHATH MEZORUIM within the city where the cured from the isolation camp were held for seven days. After a public ceremony he was officially declared clean and allowed to go to his house. The mode of life of the infected in the isolation camp is not described but we assume that the authorities supplied their needs as well as medical attention else they could never report them cured. There is one indirect evidence that the affected were watched. We find that during the war between the Hebrews and Syria, 4 lepers outside the gate stealthily at night broke thru the leper camp and entered the Syrian camp and when they returned they reported their finding to the Shoar or watchman who reported the matter to the authorities of the King. (King ii-7-10-12).

ISOLATION ENFORCED.

There seems to be sufficient evidence in the Bible to convince us that the laws of isolation were rigidly enforced.

Priest and king no more than laymen were immune. From one authentic case reported in the Bible the entire Army of Israel had to stay, because of a suspicious case of Zoraath that had to be detained for observation. This was the case of Miriam who was suspected of Zoraath and she was detained for seven days. The case of Miriam was not Zoraath and belonged to the type requiring detention, and after seven days she was declared free from contagion and the army marched on. A real case of Zoraath is reported in the person of King Uzia; he had an incurable condition "Nigo Bo" and he was isolated for life in the *Beth Hachofshith Mezora*. At this period the term Mokom Tomeh which was employed in the earlier times had been changed to a more definite term *Beth Hachofshith Mezora* or as the Targum expresses it *Beth Segurutha*, meaning isolation plant.

Men afflicted with Zoraath had probably difficulties in entering the country. There is no direct evidence on the subject; there is, however, one case on record and we may draw conclusions from it. We find that General Naamen, the great hero of Syria, was afflicted with leprosy and a Jewish maiden told him that Elisha, who lived in Shomron, cured leprosy. It should be remembered that Shomron had a leper colony and Elisha apparently was known as the healer of the disease. The King of Syria gave him a letter to the King of Israel asking him to have his general healed. The fact that Naamen required a letter from the King would indicate that he might have had some difficulties in entering the

land of Israel. Of course this is very meagre evidence but it is the only one found in the Bible from which conclusions may be drawn.

A question open for discussion is whether these laws in reference to isolation had a hygienic basis or a purely religious significance.

In considering this problem let us state the conditions that required isolation. According to the biblical text (No. 5-2) "Commend the children of Israel that they put out of the camp every leper and every one that hath an issue (Gonorrhea) and whosoever that is defiled by the dead." We find three different forms of uncleanness that required isolation. In cases of cleanliness from the dead (probably from an infected dead body) isolation was practiced for seven days. There is no question of diagnosis, nor any discussion on the number of days of detention nor any provision for a cure. The law is clear "He that toucheth the dead body of any man shall be unclean for seven days;" the purification shall begin on the third day and shall be concluded on the seventh day when he shall be clean again and permitted to partake of all holiness.

In cases of gonorrhea the law provides that he shall be isolated until the discharge stopped, plus seven days after the discharge has stopped then the act of purification shall be performed and he is declared clean.

The provision for leprosy we stated above.

Careful analysis of the various forms of Tomeh and the different modes of isolation for each of them suggests to me with almost certainty that the chapter in dealing with the various forms of Zoraath has a distinct hygienic basis and was no doubt prompted by an earnest desire to pro-

tect the interest of the community by preventing the spread of the contagious element. In all other forms of ritual uncleanness we find that they shall be unclean until the evening when they shall wash and be clean again so that they can partake of holiness. There is no isolation except in the so-called Tomeh-Lameth where one week's isolation is practiced ere he can be permitted to enter the holy places. This form of isolation is either purely ritual or has reference to those cases where the dead had an infection before. In leprosy this is not the case. The isolation is indefinite until a cure is obtained and then he is permitted to go to his house. No reference is here made to any holiness or holy place. Again the minuteness with which this chapter deals, even after the cure, certainly indicates more than the ritual "Tomeh." In all other forms we find the reason given "Be ye holy for I the Lord am holy," while in this chapter of Zoraath the word Kodosh or holy does not appear, but the reason stated for the isolation is "that ye die not in your uncleanness." The fact further that the destruction of buildings and clothing is advised in some forms instead of the usual washing of the material, certainly proves that the primary act for the rules of segregation were to safeguard the health of the community. In fact the text reads "if the Nega has spread," indicating that the danger is from the spread of the disease, from the sanitary point of view. It may be mentioned, however, that a priest had to undergo a physical examination and among the blemishes that disqualified the candidate Zoraath is also mentioned, showing that it belonged to the category of physical defects and not to ritual uncleanness. We recapitulate them:

(1) That Zoraath was considered a contagious condition.

(2) That isolation was practiced from the sanitary point of view.

(3) That suspicious cases were detained for about 2 weeks within the city.

(4) That the permanent isolation place was outside the city.

(5) That the cases were reported to the sanitary officers.

(6) That after the cases were cured another seven days isolation was practiced within the city and not within the leper camp.

(7) That watchmen were employed to have charge of the camp which were employed by the city.

(8) That the public religious ceremony was employed for the benefit of the sick as well as the public so that the affected and cured individual could return publicly to his home without inconvenience.

(9) Lastly from what we have learned it is clear that the great modern principle of isolation was known to the Hebrew law giver and has been practiced among the ancient Hebrew people.

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TWO FAMILIES OF SIX LIVING GENERATIONS.

BY

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Families of six living generations are so extremely rare that the accompanying photographs should prove of interest. With many difficulties I have secured the following data and report the facts in the hope that other cases may be brought to light and reported. Possibly the details of the Shrake family may have been put on record in some medical journal, but I do not think so.

The Shrake Family.—The following details have been gleaned from several sources, published in newspapers, and de-

rived from letters of members of the family, photographers, and fellow citizens or acquaintances, residents of Wyalusing, Grant County, Wisconsin, and in Bloomington, Wisconsin, about five years before the death of Mrs. Shrake.

The First Generation.—Mrs. Lydia Thomas Ault Shrake was born in Cornelsville, Pennsylvania, in 1814. At the age of 18 she married William Ault. Five children were born. Mr. Ault died in 1839, and two years later Mrs. Ault married Jacob Shrake. Again five children were born. "Grandma Shrake" sent five sons to fight in the Civil War.

The Second Generation.—Margaret Ault Elder was born in 1835 and married at the age of 15, and, at the date of this quoted report had borne ten children, seven of whom were living.

The Third Generation.—Rachel Elder Goff was born 1851 and married at the age of 17. She was the mother of twelve children, seven of whom were living at the time of the report sent to me.

The Fourth Generation.—Melissa Goff Spaulding, born in 1873, married at 15, became the mother of three living children.

The Fifth Generation.—Cora Spaulding Gulley was born 1891, married at the age of 15, and had one child.

The Sixth Generation.—Agnes Elder Goff Spaulding Gulley was born August 5, 1908.

One of my informants, Mr. Brookens of Bloomington, Wisconsin, wrote me in 1909 that he photographed five generations, the Cooley family, "the eldest lady in this case being about 90 years old." "It was a tie between the Shrales and the Cooleys. No one ever thought that either family would be able to produce the sixth generation before the chain was broken; but the young Miss Spaulding married a young Mr. Gulley, and with only a few weeks to spare brought forth the baby which has made the family renowned."

Mr. Brookens adds that "these people live from 14 to 20 miles from my studio. They had planned to have a big gathering at the home of No. 2" (*i. e.*, the first of the upper row in the photograph) on her 79th birthday, Sept. 4, 1908, and I had been engaged to make the photograph that day, but

No. 2 died Aug. 30th and was buried Sept. 1st. On Sept. 4th, as prearranged the five living parties were photographed and I copied from an old photo the deceased lady. So you see that all six generations were living from July 25th to Aug. 30th. The oldest lady is 95 past, she has 41 grandchildren and 167 descendants."

"Margaret Elder died about 20 days after baby Gulley was born."

The five mothers married at ages 18, 15, 17, 15, 15, thus averaging 16 at the time of marriage.

born August 8, 1853, and married Mr. Sayres; a daughter, Lucy Sayres, was born Feb. 2, 1872, married Mr. McDade. Emma McDade, daughter, was born November 8, 1888, and married Mr. Feinman; their child Celestes Feinman, was born on July 1, 1907. The photograph, here reproduced, was taken either on the 27th or 29th of September, 1908.

Noteworthy are some facts, needing confirmation in other cases: First, the transmission thru females; second, early marriage and child-bearing; third, the influence



THE SHRAKE FAMILY.

Second Family.—I regret want of details in this account, but the following facts I can vouch for as they come to me direct from members of the family.

Anna Maria Pluck of Pennsylvania was born October 15, 1808, and died October 23, 1908. She married Isaac Pass, great nephew of Jacob Pass, in whose foundry (Pass and Stowe) was recast the Independence Bell.

Her daughter, Margaret Elizabeth Pass, was born March 7, 1837; married Thomas David. Her daughter, Lillie David, was

of determination to live to or beyond the 100-year mark on the part of those nearing it.

By the courtesy of Lt. Col. C. C. McCulloch, Librarian of the Surgeon General's Office, Army Medical Museum and Library, Washington, D. C., I have received a copy of a rare old book, *Records of Longevity*, by Thomas Bailey, published by Darton and Co., 58 Holborn Hill, London, 1857. From this interesting volume I copy the following accounts:

Mary Gomersall, near Wakefield, died

1763, aged 107. She was mother to 14 children, grandmother to 33, great-grandmother to 84, and great-great-grandmother to 25; in all 156 descendants (p. 178).

Mrs. Keithe, of Newnham, Gloucestershire, died 1772, aged 133. She left three daughters—the eldest aged 111, the second 110, the youngest 109; also seven great-great-grandchildren (p. 230).

Mr. Robert Thomas, of Fairfax County,¹ U. S., died 1821, aged 107. He lived to see the sixth generation of his family, with an almost unprecedented number of descend-

father to 11, and great-great-great-grandfather to 4 children. He retained the use of his faculties in a remarkable degree (p. 118).

Mary Innes, an unmarried woman, of Glunaskilly, Isle of Skye, died 1814, aged 127. She was for most of her life a servant in the family of Glunaskilly, and lived to see the sixth generation. She retained the use of all her faculties to the end of her days (p. 225).

Nicolas Petours. A prodigy, in the person of this man, was said to have entered the town of Coutance, France, in October,



THE PASS FAMILY.

ants. Altho his habits thruout life were far from being abstemious, he never had occasion to ask for medical advice; and he retained the full use of all his intellectual faculties to the end of his days (p. 358).

John Cuppage, Esq., of Muncaster Hall, Drigg, Cumberland, died 1747, aged 104. He had 4 wives, by each of whom he had one daughter only. It was remarkable, however, that each of these daughters had, alike, 14 children; so that at the time of his decease, he was grandfather to 56, great-grandfather to 19, great-great-grand-

1712. He had traveled on foot. He said that he was 118 years of age, having been born at Granville, near the sea, in the year 1594; that he was by trade a shoemaker, and had walked from St. Malo to Coutance, which was 24 leagues distant in two days. He seemed as active as a man in the prime of life; and said he came to attend the event of a lawsuit, in which his family had an interest. He further stated that he had been four times married. With the first wife he lived 50 years, with the second only 20 months, with the third 28 years, and that, to the fourth he had been wedded only 2

¹ I suppose, State of Virginia. G. M. G.

years; that he had children by the 3 former wives, and could boast of a posterity which extended to the 7th generation. He added that his family had been as remarkable for longevity as himself; that his mother lived 97 years after he was born; and his father, in consequence of having received a severe wound, died at the age of 123. His uncle and godfather, Nicolas Petours, curate of the parish of Baleem, and afterwards canon and treasurer of the Cathedral of Coutance, died there, aged 137 years, having celebrated mass only 5 days before his decease (p. 290).



The Use of Desiccated Placenta, with Special Reference to the Vomiting of Pregnancy.—Cary in *Surgery, Gynecology and Obstetrics* (Aug., 1917) states that the toxemias of pregnancy are due to the liberation of the products of early autolysis of the placenta, because they are associated with recent infarction of the placenta, and the placenta is so constructed that the products of the dying patch can pass directly into the blood stream.

He considers it advisable to administer placental extract:—

(1) If the condition is due to a lowered immunity of the host to the growth of the syncytium as seems probable by the work of Acconci, it may stimulate by acting as an antigen. The work of Curtis also bears this out.

(2) If the proteolytic ferment is lower than normal, as demonstrated by the negative Abderhalden reaction, it may increase the ferment content of the blood.

(3) The placenta may be a gland of internal secretion, and it may increase the action of the thyroid and adrenals, and by so doing hasten the oxidation of partial protein, split-products being thrown into the circulation.

Of thirteen cases of vomiting of pregnancy, two were lost sight of, the remainder—seven stopped vomiting within a day or two and the nausea soon disappeared. Two

improved and remained fairly free from nausea, altho the administration of the extract had to be continued over a long period of time. In the remaining two cases the results were not satisfactory; one was definitely neurotic.

Use of the X-Rays in Connection with the Ductless Glands.—Hernaman-Johnson in an interesting article in *The Practitioner* (July, 1917) says that the therapeutic effects of X-rays upon the thyroid gland are well known, and that the dosage can be graduated to produce any desired effect on the quantity of its secretion. It should be clearly understood that this diminution, and, if necessary, complete suppression, can be carried out with as much certainty as a surgical operation for partial ablation or total removal of the gland. The dangers are in no sense comparable with those associated with the operation for total ablation of the gland. Cure cannot be effected in the presence of any persistent irritation, mental or physical, and reduced activity on the part of other ductless glands may be a factor in delaying cure. The bedside administration of X-rays in acute cases threatening life is urgently called for.

When drug treatment has failed in cases of dysmenorrhea of ovarian origin, and there is no gross surgical lesion, a trial should be given to X-ray treatment. The first period may be worse, and the second may show but little improvement. The third should be unmistakably better. If it is not, treatment by X-rays should not be pushed.

To be successful in dealing with such patients, it is not sufficient that a man should have a thoro grasp of electrical technic; he must also possess wide medical knowledge and sound judgment.

The Thymus Gland and Its Relation to the Female Genital Tract.—In *Surgery, Gynecology and Obstetrics* (Sept., 1917) Pappenheimer points out that the development of the thymus and the lymphatic tissue runs parallel to the general nutrition. Healthy, well-fed animals have large glands; diseased, ill-nourished ones have atrophic glands. It may well be that

the large size of the gland in castrated animals is related to the tendency of these animals toward obesity or over-nutrition, and is not to be taken in the sense of specific correlation of function. Eventually, even in the castrated animal, the gland undergoes its normal involutional changes.

Fulci reports that pregnancy in rabbits accelerates the regression of the thymus, but after birth of the young there takes place a distinct renewal of growth. Bompiani claims that lactation inhibits this regeneration.

The fundamental problems of thymus physiology remain unsolved, and the established facts, which concern chiefly the normal and abnormal structure of the gland, are not such as lend themselves to clinical application.

The Internal Secretions as Related to Tuberculosis in Civil and Military Practice.—Sajous in *New York Medical Journal* (Sept. 1, 1917) states that notwithstanding the discovery of the tubercle bacillus has immeasurably widened the scope of research and increased somewhat our therapeutic efficiency, the underlying physical condition which predisposes to the development of the tuberculous process has remained obscure. Time has served to emphasize increasingly the importance of the ductless glands in many directions. We are bound, Sajous says, with the teachings of modern research before us, to take into account, the role of these organs in both phases of metabolism—that is to say, the building up and breaking down process in the tissue cell, including the elimination of what wastes are formed as end products. The breaking down feature of cellular function, catabolism, is intimately related with protection against infection, including that due to the tubercle bacillus, since the defensive process is but an amplification of that catabolism in the sense that the identical function which serves to break down used up tissue elements is also employed to destroy pathogenic organisms and their toxins.

Atrophy, or defective development of the thyroid is commonly observed in persons predisposed to tuberculosis and other infections. The prominence of Adam's apple

in many such subjects is due to the fact that a flat thyroid fails to fill sufficiently the infrathyroid portion of the neck to preserve its normal shape. Such a diminutive thyroid may be due to deficient antenatal or postnatal development, but in many instances it is traceable to infectious diseases which by causing interstitial punctiform or extensive hemorrhages, or other changes in the glandular parenchyma, initiate therein the formation of fibrous tissue which inhibits more or less the functional efficiency of the organ.

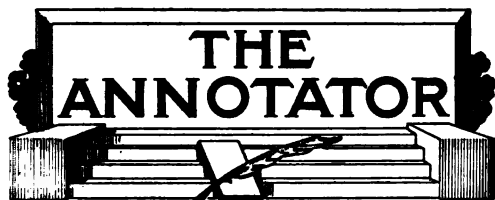
The digestive ferments carry on simultaneously two processes in the cell; metabolism and protection.

The pancreas is shown to influence carbohydrate metabolism thru its internal secretion. Thus impairment of the pancreatic internal secretion means reduced muscular power, or myasthenia. Again, the adrenal secretion, possessing the power to "stir up," as MacCallum words it, the islets of Langerhans; any degree of hypoadrenia tends to inhibit their action likewise—another source of myasthenia thru the pancreas. We thus have thru insufficiency of the latter and of the adrenals one of the most marked early symptoms credited to tuberculous infection; loss of strength, the so-called neurasthenia, or chronic fatigue.

The relationship between the ductless glands and tuberculosis is mainly concerned—as far as our present knowledge permits us to believe—with the defense of the body against infection. Porter says while it may be impossible to exterminate tuberculosis as completely as theory would suggest, it is still within the range of probability to prevent the development of thousands of cases every year. Its accomplishment, he declared, is to be effected along the line of prevention of a soil, suitable to the growth of the tubercle bacillus. This is precisely—according to Sajous—the role of the ductless glands.

Placenta Regarded as a Gland of Internal Secretion.—Dr. Robert T. Frank in an interesting paper read at a meeting of the American Gynecological Society. Pittsburgh (June, 1917) claimed that the experimental work of the last decade proved

that Halban was correct in ascribing to the placenta an action upon the uterus and breasts. Placental extracts, mainly the lipoid fraction, rapidly induced hyperplasia of the uterus and breast, gland tissue and nipples in castrated or in non-castrated animals. The chemical substance which induced these changes was thermostable, very resistant to strong alkalies and acids, and completely soluble in ninety-five per cent. alcohol. The substance appeared identical in its physical, chemical and biological properties with a similar substance obtained from the corpus luteum. The substance could exert its influence in the absence of the thyroids, adrenals, pancreas, or in the absence of thyroid and adrenals combined. In view of the apparent identity of corpus luteum and placental substance, the question arose whether the placenta acted merely as a storage reservoir for corpus luteum secretion during the latter half of pregnancy, or whether the placenta elaborated a hormone of its own.



The Care of the Foot.—Conscription in European countries has clearly demonstrated the fact that defective feet are extremely common in all ranks of life. The ordinary civilian mode of living places little strain on the feet. Indeed, in these days, if an individual is not energetically inclined, he need take almost no pedestrian exercise. If he be well-to-do



he may ride in his motor car, and if he is not able to afford this manner of transit the facilities for transport are still so plentiful, that walking is seldom or ever called for. The consequence is that men, women and even children of the present day, not having the occasion, or not being compelled constantly to use their feet, do not take proper care of them. The feet not being subjected to any strain are put into ill shaped, tho essentially fashionable shoes,

which if their wearers had to take much active exercise would be impossible to wear, and which under existing circumstances frequently deform the feet. Lack of walking exercise is mainly responsible for the unhygienic footwear which, under the guise of fashion, is in vogue nowadays, and to this cause is almost wholly due the prevalence of malformed and defective feet.

While civilian life does not demand the maximum degree of foot efficiency, but rather encourages laziness, military service insists upon such efficiency. As Dr. Harold D. Corbusier truly remarked in *AMERICAN MEDICINE*, May, 1917, "No army ever hobbled to victory, but foot endurance has often turned the tide of battle." So long as the soldier is well fed and comfortably shod, he will exhibit remarkable powers of endurance and *vice versa*. Thus upon the condition of the soldiers' feet the fate of empires may largely hinge, and the shape of a shoe or the texture and fit of a sock may be the factor which brings about victory or defeat. The footsore soldier is a subject frequently dealt with by the historian, and all great commanders have fully recognized the supreme importance of the ability to march for lengthy periods. However, there is little need to elaborate the points that to be a really efficient soldier, one must be able to march for long distances, and that in order to make long marches one must wear stout and easy fitting footwear. These are obvious facts, and merely serve to accentuate the assertion that civilian life does not tend to produce strong feet but the reverse, and that army life supplies the supreme test. It follows, then, that the examination of the feet of recruits is an important part of the examiner's duty, and that this examination should be searching and sufficiently severe. Nevertheless, undue severity must be deprecated. Examination should be tempered with discretion, for it should always be borne in mind that various defects can be easily remedied by simple operation and that a great deal can be done in the way of overcoming foot disability by supplying proper and hygienic footwear.

Generally speaking, it may be said that if the applicant for enlistment is put thru foot and leg tests without showing evidence of feeling pain he may be passed by the examiner. Of course this statement presupposes that he has no palpable de-

formities which would under stress of increased exercise, tend to prevent free action of the joints. Certain deformities and defects, thought by many to be of a nature serious enough to justify rejection, have been shown by Col. Robert Jones of Liverpool, the well known orthopedic surgeon, to be capable of remedial treatment and correction. It is quite astonishing to learn from this high authority the number of deformities and defects of the feet which can be thus successfully treated. Among the number may be mentioned "flat foot" and "hammer toe." It will be superfluous and outside the scope of an article of this character to attempt to enumerate the many kinds of deformities and defects of the feet to which man is prone. It will not be out of place to emphasize again, however, the statement that the large majority of these disabilities are due to the dictates of fashion. Fashion has decreed that men's and women's feet, and especially women's, should be compressed into tight, narrow, anatomically incorrect coverings which, in many instances, are instruments of torture rather than comfortably fitting shoes.

With regard to the examination of feet for military service, the examiner necessarily should be sufficiently skilled in orthopedic practice to be capable of distinguishing between those deformities and defects which absolutely disqualify for service and those which can be remedied by suitable treatment. Many physically magnificent specimens of humanity suffer from defects of the feet, and it is a matter of moment that treatment will render a great number of these cases available for military service.

The feet of the soldier on active service must be carefully safeguarded, as it is when on active service that the feet are put to the greatest test. To the feet of the soldier should be given even more attention than is proverbially given to the feet of the horse. There have long been experts to work on the feet of the army horse, but it is only since this war developed that experts in the care of the human foot have been assigned to duty with troops on active service or in training. Many and various are the ailments which may afflict the feet of the soldiers on the march, or in the field. Among the most frequent of these is the

so-called "weak foot." This may be remedied by the French marching strap, which is placed under the shank of the shoe, crossed over the instep and then around the ankle and fastened. In most cases, the wearing of a shoe constructed on the proper principles will avert the feeling of pain and depression of the long arch which accompanies the "weak foot," or will cure the condition when developed. Such a shoe should have a thick shank and the upper should be fitted snugly under the long arch.

Blistering of the feet is the commonest disability which the marching soldier has to encounter and the chief means of prevention is a well fitting, roomy shoe. According to Major Corbusier the best treatment for blisters is to paint them with a tincture of iodine $3\frac{1}{2}\%$, open with a needle, which has been sterilized in the flame of a match, and then apply a small dressing of cotton or gauze held in place with adhesive plaster. Socks should be of wool, of sufficient thickness to protect the feet, and should be carefully put on so that there are no wrinkles or ridges. Also in order to prevent blisters, foot powders composed of stearate of magnesia or zinc should be liberally applied. A greasy powder which is non-irritating is a more effective preventive of blistering than a perfectly dry powder. Socks, in addition to being reasonably thick and well fitting should be kept as clean as possible. If careful attention is thus paid by the soldier to the feet, most of the minor ailments to which they are subject may be avoided. At the end of a march the feet should be washed and if facilities for washing with water are lacking, it is a good plan to rub them over with some good grease or oil.

The recruit is prone to attribute any foot troubles which may develop during military training to the training exclusively, whereas in the majority of instances such affections are the result of the abuse and neglect of feet in civilian life. Foot deformities and defects are mainly due to the wearing of ill fitting shoes, which are not at all adapted to the contour of the foot. As a matter of fact many of the shoes worn at the present time are crippling, and if military training has the effect of demonstrating the harmfulness of ill shaped, improper footgear, it will have performed a great service for the country.

The question of the kind of shoe which should be worn cannot be adequately discussed within the limits of this article. Major Corbusier in his admirable paper in *AMERICAN MEDICINE*, May, 1917, has described the hygienic shoe. Col. Robert Jones in several British medical journals has also minutely and exhaustively shown the ideal shoe for the soldier.

All authorities are agreed, and the experience of the war gives especial importance to the matter, that the shoes in ordinary use by civilians are not only ill adapted to hard work, but are so poorly fitted that they tend to deform the feet and produce defects that often seriously disable their wearers. This is a problem with which physicians are intimately concerned, and it would be in the best interests of public health, if they suggested to patients suffering from defects or abnormalities of the feet the kind of shoes best calculated to remedy their condition, rather than to leave them to the tender mercies of the average shoe salesman. A person who wears badly fitting shoes cannot take exercise necessary to maintain good health, and here we find one of the most common causes of physical depression. The war, if it has done no more, has taught the lesson that the care of the feet is an important factor in the preservation of good health and comfort, and that the role of the physician should be to teach how to scientifically care for the pedal extremities.

The Retraining of Disabled Men.—The problem of the disabled soldier is an extremely grave one. Obviously the country



owes him the greatest compensation in its power to give for any personal detriment he may have suffered in the performance of his war service. A man owes a duty to his country but the country owes him something in return. However, this obligation to the disabled soldier has been freely recognized by all the warring nations, and schemes have been initiated and evolved in Germany, France, Great Britain, Russia and Italy whereby men partially incapacitated by

injuries or by other forms of sickness incurred in war, will be compensated as far as is possible. In days gone by men disabled in war were provided with a pension, which was always inadequate, while its influence was socially demoralizing. A new order seems to have arisen or has impressed itself upon the consciousness of those in authority. When the majority of the able bodied men of a nation are called to arms, and a considerable proportion of these, owing to the frightfulness of modern fighting, become disabled, it is incumbent, from the economic point of view, if no other, that the labor of those who are physically handicapped be utilized to the fullest extent. Especially should it be borne in mind that the sooner the partially incapacitated soldier gets to work the better it will be for him and for all concerned. His injuries and the trials and vicissitudes he has gone thru at the front, have very naturally sapped his energies, and life in hospitals and convalescent homes does not tend to revive feelings of ambition and self respect. It is a well known social fact, that men degenerate with startling rapidity if left in idleness, and therefore, it is in the best interests of disabled men, to teach them to earn a livelihood and to be, to some extent, self supporting as quickly as possible. In all the warring countries, a more or less adequate pension is allowed the disabled soldier, which is continued even after he has learned a trade.

It can readily be seen that the question of the injured soldier is of great economic importance to his country. In fact, the economic results that may be expected to grow from the restoration or partial restoration to active life of the large percentage of men, computed at 80 per cent., or thereabouts, crippled by war, can hardly be overestimated. Figures published recently in France show that an average reduction in the aggregate of physical disability of say 20 per cent., has effected an automatic saving to the State of nearly \$10,000,000 per annum! Important and gratifying as this must be, it will be apparent that the saving of men for the industrial life of a nation may be productive of results contributing even more to a country's wealth and prosperity. The rehabilitation of the disabled soldier is usually more of an industrial problem than medical; in

other words, his industrial training is fraught with greater importance to the nation than his medical treatment. However, these are often so interrelated that they must be considered together, for unless the disabled soldier is so treated that he is able to pursue his industrial training with a fair hope of attaining proficiency, such training will be merely a waste of time. Therefore, in the training of injured soldiers, all classes of society should take part and as Mr. Douglas C. McMartie has pointed out, a commission composed of civilians and medical men would seem to be the logical way of meeting the situation. Included in the membership of the commission should be officers of the medical corps of the army, orthopedic surgeons, vocational educators, efficiency experts, large employers, representatives of labor, social workers and specialists in dealing with cripples as a class. The commission should be as small as possible, or if large, should act thru a capable executive committee. Mr. McMartie further suggests that it might be best to have such a commission connected with the national department concerned with the general supervision of the returned soldier. An especially desirable course, in the opinion of Mr. McMartie, would be to have the surgeon general appoint a commission, made up as indicated, to act with specific authority in the after care of war cripples. It is important, obviously, that the civilian viewpoint, social, educational and industrial, be adequately represented, but the success of an organization to deal in the most effective manner with the treatment of the disabled soldier will depend to a very large extent on the authority it has to carry its plans into effect.

At the beginning there will necessarily be a certain amount of difference of opinion as to the best ways in which the disabled soldier can be helped to become of economic advantage to his country, and a self-respecting and independent member of his community. Unquestionably first of all, however, he should be rendered as physically efficient as possible, and in the attainment of this result, he should undergo systematic training. In order to be curative, work must not only be of the right kind, but supplied in the right amounts and in the right way. The first difficulty to be overcome is to provide the disabled man whenever necessary

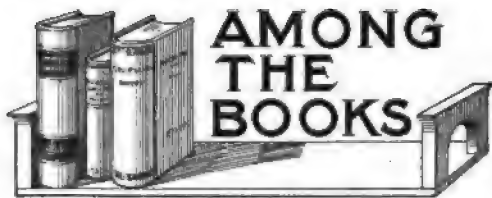
with artificial limbs to take the place of those lost and to restore injured functions as satisfactorily as may be possible; a workman requires a substitute for a lost limb that will not only afford maximum physical efficiency but that will be able to withstand the wear and tear of the workman's life. The above statement applies especially to the lower extremities. With regard to men disabled by injuries, these, according to Dr. Fortescue Fox in a book recently issued may be classed as follows:

(1) A certain proportion of the total number of wounded are so disabled as to be incapable of any further work. Such invalids in due course of time will be returned to their homes or cared for in special institutions.

(2) A more numerous class of disabled men have lost one or more limbs, but can be restored wholly or partially to active life. Stress may be laid on the fact that physical treatment can greatly aid in the sound healing and relieving of pain in the stump and also in developing the muscles and muscular sense upon which the work of the artificial limb will depend.

(3) The third and largest class of disabled soldiers is made up of men suffering from more or less functional disablement of one or more limbs. For this kind of disablement, physical treatment is peculiarly appropriate, as treatment of this nature is directed to the relief of contractions and scars and to the restoration of movement and muscular power. In these cases the functional re-education of the limb by means of special exercise and remedial work forms an integral part of the treatment pursued in the "curative workshops" in Great Britain. In keeping with his bent the disabled man is taught a trade or is re-educated in a trade, or is trained in work which places no particular strain on his physical or mental powers. As Professor Jules Amar, in a paper contributed to the *American Journal of Care for Cripples* (Vol. III, No. 4), and reprinted in April, 1916, *Bulletin of the Military Hospitals Commission*, shows, in the choice of an occupation one must be guided only by facts obtained by observation and subject to verification. The rehabilitation of the maimed soldier must be mental as well as physical. Work exerts a psychological influence of the utmost importance, especially

congenial work which takes the thoughts away from the injuries the soldier has suffered and the horrors thru which he has passed, acts as a spur to his ambition, and is restorative from all points of view. In the National Service number of *AMERICAN MEDICINE*, May, 1917, are two exceptionally valuable papers by Major John L. Todd and T. B. Kidner of Ottawa, Canada, which discuss the retraining of disabled men and their vocational education, and to which we strongly commend the attention of our readers. It is a very big subject and the remarks made in the present number only touch the periphery. The matter will be referred to later and at greater length. It is very gratifying to learn that steps are being taken under the direction of Col. Gorgas to establish "curative workshops" for disabled soldiers thruout this country, and of course, he and those working with him will take advantage of the experience and mistakes of the European nations in this direction.



Diseases of Women.—"Good wine needs no bush" and the ancient saw may be well applied to the sixth edition of that excellent work—*A Text Book on the Practice of Gynecology* by Dr. William Easterly Ashton (*W. B. Saunders Company*, Phila.). The fact that in a short space of time this book has gone thru six editions is convincing proof of its value and popularity. Probably no work on the subject is more complete, for it gives in detail, even to the minutest, full and exhaustive descriptions of gynecologic diseases; following which it states what should be done in each case, supplementing this information by directions and illustrations so explicit and graphic that they may be intelligently and easily followed. The illustrations, which number ten hundred and forty-six, are all new line drawings made under the author's personal supervision from actual apparatus, living models,

dissections on the cadaver, and the operative technics of other writers.

This edition has been carefully revised and an especial feature of the volume is that the prophylactic treatment and early diagnosis of cancer of the uterus has been considered from the viewpoint of the family doctor; the entire subject has been so simplified that the general practitioner by following the precepts laid down will be enabled to greatly lessen frequency and mortality of malignant disease in women.

A Popular Practice of Medicine.—The practice of medicine is a wide subject. The author who aspires to shine in this sphere of medical literature must possess many essential qualities in order to win recognition for his work. He must be acquainted with his subject from A to Z and must be able to express himself in succinct and easily comprehensible language. Many medical writers who know medicine clinically and theoretically well, fail ignominiously when it comes to putting down the results of their accumulated knowledge on paper.

In his *Text Book of the Practice of Medicine*, (*W. B. Saunders Company*, Phila.) Dr. James M. Anders has succeeded admirably where so many have failed. It would be attempting to paint the lily to lavish praise on a work which has become a medical classic. Suffice it to say that this twelfth edition, while retaining all the features which gained popularity for the former editions, has been thoroly revised and brought up to date, and is in every respect a model of what such a work should be.

Anders "Practice" is one of the small coterie of standard text-books that have helped to make American medical men the most efficient medical practitioners in the world. There are not many successful physicians today who do not owe a genuine debt to this truly remarkable work.

Diagnosis.—Differential diagnosis is obviously one of the most difficult subjects on which to write. Diagnosis is too frequently based upon symptoms, and some practitioners never get beyond symptoms,

for the simple reason that they lack the requisite knowledge. A good diagnostician manifestly makes the best physician, as it is accuracy, or comparative accuracy of diagnosis, that distinguishes the great physician from the ordinary practitioner. However, many general practitioners are also good diagnosticians, and therefore great physicians. For many years, Sir James Mackenzie, perhaps the greatest living heart specialist, was a general practitioner.

If a correct diagnosis is not made, then treatment will be faulty, or at any rate, of the "hit or miss" variety. While the sure diagnostician is like the poet, "born and not made," much can be learned in this direction by practice and persistence.

Dr. Richard C. Cabot possessed the courage of his opinions, when a few years ago he wrote a book on Differential Diagnosis, (*W. B. Saunders Company*, Phila.) but that his courage was justified and the expression of his opinions appreciated by the medical profession has been shown by the fact that the first volume has gone thru three editions. In this volume, the symptom pain and twelve other common symptoms are dealt with. The plan of the author is as follows: (a) To present a list of the common causes of the symptoms most often complained of by patients. (b) To classify these causes in the order of their frequency, so far as this is possible. (c) To illustrate them by case histories in which the presenting symptom is followed home until a diagnostic problem and its solution are presented.

In the second volume nineteen other symptoms have been selected and diagnosed. Here the aim of the author has been to show how by a study of the symptoms and by special methods of questioning or examination the actual cause of disease can be found.

Both volumes are beautifully illustrated from cases which have come under the author's observation. The illustrations add greatly to the value of the book as a means of teaching differential diagnosis, and the work as a whole is a meritorious and practical contribution to medical literature.

Nutrition.—As everyone knows the food question is greatly in evidence now-

adays. The fact is beginning to be generally recognized that, in order, to derive the most value from a food material, such material must be studied scientifically. The why and wherefore of the entire subject must be known, in order that the people at large may be fed, not only properly and well, but what is especially necessary at the moment, economically.

The *Elements of the Science of Nutrition* by Dr. Graham Lusk (*W. B. Saunders Company*, Phila., 1917) is a work that sets forth certain salient truths ascertained by the most careful investigation and experimentation. The first edition of the book was published ten years ago. The present, the third edition, shows many important additions to the facts of metabolism, and revisions of its theories. The object of the work, to review the scientific substratum upon which rests present day knowledge of nutrition in health and disease, is well fulfilled. It stands forth as one of the most valuable as well as comprehensive contributions to the subject in the English language. With the problems of human nutrition filling the important place they do today not alone in medicine but likewise in economics and social life, the practical utility of such a work to the busy, but truth seeking, practitioner, is obvious.

Nervous Ills.—Nervous diseases, like the poor, are always with us, and also like the poor, appear to be ever increasing. The diagnosis and treatment of nervous affections present many features of difficulty to the medical student and general practitioner, who, in consequence are very apt to regard neurology as an especially abstruse and difficult subject. In fact, somewhat of an air of mystery all too often envelops our knowledge of the diseases of the nervous system. With the view of divesting the subject of its mysterious attributes, and to further a proper understanding of the anatomy, physiology and diseases of the nervous system, Dr. Irving J. Spear has issued recently (*W. B. Saunders Company*, Phila.) a *Manual of Nervous Diseases*. In this work no effort has been made to cover the subject of neurology completely, but the author has, nevertheless, treated it with sufficient fullness to make comprehension

of the features of organic nervous disease easily possible. The book is well arranged, excellently illustrated and written in clear and concise language. It will prove extremely useful to the general practitioner as well as to the medical student, and should be freely used both for reference and study. Dr. Spear has done a real service to his colleagues. He deserves the heartiest commendation for the efficient character of his book.

The Physiology of Food and Economy in Diet.—By W. M. Bayliss. Longmans Gree & Co., New York. Price 65c net.

Rational Sex Ethics.—By W. F. Robie, M. D. Richard G. Badger, Boston. Price \$3.50 net.

Food Preparedness for the U. S.—By Charles O'Brien. Little, Brown & Co., Boston, Mass. Price 60c net.

Some Personal Recollections of Dr. Janeway.—By James Bayard Clark. G. P. Putnam's Sons. Price \$1.00 net.

Modern Dietetics.—By Lulu Graves. Modern Hospital Pub. Co., St. Louis, Mo.



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NEW WAR HOSPITAL DIRECTED BY DR. BLAKE.

Exterior view of the New American Red Cross Hospital in Paris, opened on May 31 by President Poincare and directed by Dr. Joseph A. Blake, who has been doing wonderful work in France since the beginning of the war. The building was formerly the clinic of the noted Dr. Doyen.

BOOKS RECEIVED.

The Biology of Twins.—By Horatio Hackett Newman. University of Chicago Press, Chicago, Ill. Price \$1.25 net.

The History and Practice of Psychoanalysis.—By Poul Bjerre, M. D., translated by Elizabeth N. Barrow. Richard G. Badger, The Gorham Press, Boston. Price \$3.00 net.

Contribution to Psychoanalysis.—By Dr. S. Ferenczi, Medical Adviser to Hungarian Law Courts. Authorized translation by Dr. Ernest Jones. Richard G. Badger, The Gorham Press, Boston. Price \$3.00 net.

The Elements of the Science of Nutrition.—By Graham Lusk. W. B. Saunders Co., Philadelphia, Pa.

Wishfulfillment and Symbolism in Fairy Tales.—By Dr. Franz Ricklin. Nervous and Mental Disease Pub. Co., New York.

The Significance of Psychoanalysis for the Mental Sciences.—By Dr. Otto Rank and Dr. Hanns Sachs. Nervous and Mental Disease Pub. Co., New York.

The Dream Problem.—By Dr. A. E. Maeder. Nervous and Mental Disease Pub. Co., New York.



Conservative Treatment of Penetrating Wounds of the Eyeball.—Bulson in *Journal Indiana State Medical Association* (Aug., 1917),

ternal administration of calomel followed by large doses of sodium salicylate as a preventive of inflammation.

5th. The use of subconjunctival injections of cyanide of mercury to abort or retard infection.

6th. Due consideration of the fact that sympathetic inflammation has not been known to occur in less than three weeks from the date of a penetrating injury, and that during that time efforts to save the eyeball are not only justified but attended with little or no risk.

Shock.—Porter in *Boston Medical and Surg-*



(CAT.)

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DR. BLAKE IN HIS NEW HOSPITAL.

Dr. Joseph A. Blake seated at the desk in his office in the new American Red Cross Hospital which has been opened in Paris. President Poincare formally dedicated the new hospital on May 31. Dr. Blake is in charge.

says the aids in promoting the best results in this class of wounds may be summarized as follows:

1st. Application of tincture of iodine to edges of all wounds after they have been cleansed with sterile normal saline solution.

2d. Closure of all gaping wounds by sutures and covering the wound with a conjunctival flap.

3d. The use of bichloride salve in the culdesac as an antiseptic dressing.

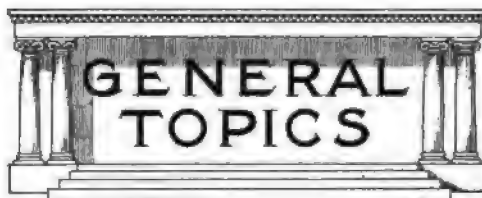
4th. The use of iced compresses and the in-

ical *Journal* (Sept. 6, 1917), declares he has collected sufficient observation to support strongly the statement that fat embolism is the principal cause of shock.

From observation of many cases it appears that increased respiration from the administration of carbon dioxide is of advantage in shock. It has not failed to raise the blood pressure even in cases of profound shock.

The wounded man was placed in a wooden box, the length, breadth and height of which were each about 35 cm. The end for the neck

was in two pieces. The lower piece was fixed and had a semi-circular opening for the back of the neck. The upper piece was movable. It had a semi-circular opening for the front of the neck. This piece slid down upon the neck like a guillotine. Cotton was placed between the edges of the openings and the skin. A hole of about 2 cm. in diameter was made in each of the two sides of the box. Cotton was placed in these holes to regulate the amount of carbon dioxide and air. The carbon dioxide entered one of these holes. It came from a cylinder provided with a regulating valve. On its way



Dogs as Carriers of Tuberculosis.—Vandenburg writes in *Medical Times* (Aug., 1917), that



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DR. BLAKE IN NEW AMERICAN HOSPITAL IN PARIS.

A scene in the laboratory of the new American Red Cross Hospital in Paris, formally opened by President Poincaré on May 31, and under the direction of Dr. Joseph A. Blake.

In the picture Dr. Blake is holding the test tube rack. With him are Doctors Taylor, Bulkley, Hervey and Holman, all of whom are American physicians.

it bubbled thru a water bottle. The volume of gas employed was judged by the number of bubbles per minute. Enough gas was used to double the respiration. The patient was in the inclined position, the feet 30 cm. higher than the head. The writer believes it would be of advantage to use carbon dioxide during operations.

Great care should be taken to discontinue the carbon dioxide very gradually. Carbon dioxide breathing may also be given without any apparatus except the box. In that case the patient produces his own carbon dioxide.

in the fight against this scourge the important part held by dogs as innocent carriers has never received the attention that it deserves.

Moisture and warmth are the natural breeding conditions of tubercular bacilli, and the dog furnishes these conditions to perfection. He is lavish in his scattering of them and is immune himself. Every dog in a community is a living menace of tuberculous infection.

Diagnostic Teeth.—The typical Hutchinson

tooth with which we are all familiar, is but one of many types of dental deformity produced by inherited syphilis. The very nature of the disease, most active as it is during the period of tooth formation, may produce an infinite variety of abnormal dental shapes and arrangements, the presence of any one of which when associated with disease in other parts of the body should arouse suspicion as to the pathology of the active process where positive evidence of its non-syphilitic origin is lacking. To ignore these signals of hereditary taint which nature has placed so conspicuously before us

in from the neck to the ends of the toes and finger tips on three or four successive nights. A bath should then be given and wait three or four days to see if the treatment has been successful and to avoid producing a dermatitis.—*International Clinics*.

To Keep Ants Out of Cupboards.—A strip of ordinary tape or other fabric, an inch wide, smeared with castor oil, tied neatly two or three inches from the floor, around the legs of safes, tables, etc., where ants are troublesome,



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IN DOCTOR BLAKE'S AMERICAN HOSPITAL AT RIS-ORANGIS NEAR PARIS.

A scene in the American Hospital of Dr. Blake at Ris-Orangis, twenty miles from Paris where the former well known American physician Dr. Blake and his wife are devoting their lives to alleviating the sufferings of the sick and wounded French soldiers. Mrs. Blake was the former Mrs. Katherine Duer Mackay, and volunteered her services in the Military Hospital at Neuilly. The famous "Blake Splint" is shown in both pictures at the left. It is now in use in all of the Allied Hospitals. Mrs. Blake spends her days reading to wounded soldiers and writing letters for those who are unable to use their arms.

is to invite diagnostic disaster.—*New York Medical Journal*.

Scabies.—Ten or twelve per cent. sulphuric ointment is an efficient remedy, but is too irritating for infants and young children. Hartzell recommends for the latter equal parts of styrax and olive oil, or one or two drams of balsam of Peru to the ounce of vaseline. Whichever remedy is used, it should be rubbed

will prevent, it is said, any ant from crossing the tape. The oil must be renewed every month or so, and care taken to prevent the tape becoming dusty.—*Bulletin of Phar.*

Book Mold.—According to the *Scientific American* mold can be prevented from forming on books in damp weather by placing a few drops of oil of lavender and Canada balsam in the back corner of each book-shelf.

American Medicine

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In Advance

Vitalizing Statistics.—Vital statistics were for years regarded as dry-as-dust compilations of figures brought together for reasons more or less obscure, or for determining the numerical status of some particular problem. The vital characteristics of statistics have only recently been appreciated. The socialization process which is at work thruout the country has transformed statistics into a dynamic science, the usefulness of which is increasing daily.

In America statistical analysis has been neglected, possibly because of a lack of interest and cooperation on the part of those whose duty it has been to gather the essential data for statistical purposes. Even such important figures as those relating to the birth rates and death rates are not available for every state in the Union, and an official publication upon birth statistics only recently has made its appearance for the first time in the history of this country.

Guilfooy and Kopf (*New York Medical Journal*, October 6th, 1917) present a progress report of the Committee on Relation of 1920 Census to Vital Statistics prepared for the Section in Vital Statistics of the American Public Health Association. The significant feature of their report is the breadth of their recommendations and the evidence of a sense of responsibility in suggesting more accurate and inclusive records of statistics in practically every branch of human activity.

The numerous discussions concerning social insurance have indicated the lack of satisfactory data concerning morbidity, and the value of institutional returns of morbidity and mortality in civil and military life for future opinion and guidance should be fully recognized. The enumeration of sickness among selected populations secured thru a sickness survey is of immense importance in determining methods of municipal attack upon health problems.

Insurance societies have assembled masses of valuable data much of which has not been analyzed or published. A co-operative study of insurance experience would be exceedingly useful in connection with projected legislation involving employers' liability or workman's compensation. The study of vital statistics of industry with relation to occupational mortality and disease merits due recognition by the United States Census Bureau.

The relation between society and the individual is so close that single factors affecting health can be picked out with difficulty save in connection with some particular affliction, such as caisson disease. A widened scope of interest in the social and economic affairs of society makes it imperative that statistical inquiries into morbidity and mortality take cognizance of the social and economic items recognizedly influencing public health or personal welfare.

While the United States Bureau of Census may not be able to secure, thru its own efforts, all the facts and figures necessary for putting into effect a complete statistical program, it should be possible for the Government to serve as a clearing house for making public statistical studies initiated, conducted and compiled by responsible and authoritative agencies. The layman has begun to appreciate the worth of statistical tables in illuminating social and sanitary conditions and is demanding data which thus far have been unavailable except to the highly acquisitive statistician of unusual enthusiasm and catholic interests.

Every popular exhibit is graced by arrays of tables set up according to the art of the publicity man and they have formed the center of interest for groups of intelligent and inquiring citizens who a decade ago would have passed them by as useless, boring, or irritating.

For purposes of comparison or study, in order to lay out systematic campaigns, in order to demonstrate the value or worthlessness of a particular scheme, in order to localize the existence of definite conditions, statistical analysis based upon competent data is a prerequisite.

The time has come when statistics are truly vital not merely to insurance actuaries and health officers, but to all workers in the fields of human betterment. The capability of the Government in the preparation of statistics has been evidenced in the publications which have been issued from practically every governmental bureau. The energy and proficiency of the Census Bureau are a credit to its personnel. The need for a broader system of statistical effort is evident and a demand for authoritative governmental figures is ever increasing. It is to be hoped that in connection

with the census of 1920 there will be evolved a system of vital statistics that will remove this country from the secondary position which it hitherto has occupied in the statistical field.

The Prenuptial Guarantee.—The New York State Legislature at its last session passed an amendment to the Domestic Relations Law which provides that marriage licenses may not be issued in New York State unless accompanied by sworn statements of the contracting parties that they have never been infected with any venereal disease or, if so infected within five years, have had laboratory tests made which show freedom from infection.

It is impossible to conjecture what will be the results of this legislation as an educational measure. It should be of the utmost value in directing attention to the amount of sickness, suffering and death which have resulted in the past from the marriage of persons while suffering from venereal infections. It is difficult, if not impossible, to legislate chastity into existence. To accomplish results with venereal diseases it is of paramount importance that sex education be so thoroly disseminated among the growing population that self-control along sexual lines becomes an integral part of the character of young America.

It is perhaps advantageous to have this legislation enacted at a time when the national government is making especial efforts to protect the military forces from venereal diseases thru a wise and well arranged program of systematic education, combined with opportunities for recreation, reading, study and utilization of spare time

in healthful activities. Foreign experience indicates that during the time of furlough or relief from the strenuous occupations of camp and trench life there is a marked relaxation of self-control, in consequence of which venereal diseases result. The problem is not one which concerns the military or naval forces alone. The protection of the general welfare of the future population emphasizes the virtue and value of the pre-nuptial guarantee against venereal infection.

There are numerous points which are bound to arise in connection with the carrying out of the provisions of a law of this kind which would not obtain during a period of peace. In England, France and Germany the total number of births has been gradually falling since the beginning of the war, but, as might have been expected, the number of illegitimate births has not decreased to the same extent as those arising during legal marriage. For this state of affairs the marriage law is valueless as a protective device unless its educational message is voluntarily accepted and recognized as valuable. This, however, is almost beyond the bounds of present possibilities.

In Italy and France, laws have been enacted which permit marriages by proxy for the purpose of legitimation of offspring or because of the pregnancy of a future wife. If such legislative action were to become effective in the United States the value of protective marriage laws would be nullified.

Efforts to Increase the Population.—

Among the belligerent nations every effort is being strained to increase the population. Bars to matrimony are being lowered; the cry for more children is dominant; and there is a willingness to sacrifice much pro-

phylactic legislation in order to secure a higher birth rate. In France a bill has been introduced, tho not yet acted upon, which provides for a relaxation of the traditional secrecy of the profession in matters of abortion in order to apply controlling penalties to the practice which has deprived France of innumerable children during the past generation.

It is obvious that, while there are numerous influences at work in the interests of public health, to increase the difficulties of entering into marriage, there are, at the same time, powerful, social agencies endeavoring to encourage and expedite marriage for the sake of increasing the population. The great disparity between the sexes, which has resulted from the loss by wounds and diseases of able men, increases the significance of these tendencies to alter the standards of health and morals for the benefit of national progress along economic and social lines, regardless of racial consequences.

It is patent that there are a large number of new medico-social problems developing which must be met with frankness and candor and with a broad view of the welfare of the Nation. It is doubtful whether marriage laws of this character will have any other effect than that which may be secured thru their educational values.

If matrimony is barred to large numbers of the population, it is not unreasonable to believe that illegitimacy will increase in the United States. Whatever the results may be, the law as passed should have a profound influence upon parents and physicians by stimulating more thoughtful interest in the hygienic importance of the marriage contract being consummated only between individuals free from venereal diseases. The health of the contracting parties is of

more importance to the state and the race than is their financial, economic, or social condition.

War Wastes.—War conditions have called attention to the part economics play in national health and welfare. Individuals and institutions are advised to direct attention to numerous methods for avoiding waste with a view to conserving our food resources and general supplies so that a large measure of sustenance and materials may be exported for the relief of foreign lands.

There has been, in hospitals particularly, unconscious prodigality in the use of supplies. Treatment of human beings has been regarded as a justifiable reason for the wholesale use of commodities without careful consideration of the possibilities of unnecessary extravagance. Attending physicians and surgeons have not been conscious of the economic value of the materials which they are wont to use in their daily work of succoring the inmates of the institutions they serve.

The Flower Hospital of New York has made use of a card indicating the war time economies which may be effected by doctors, nurses and attendants without sacrificing the welfare of the real patrons of the hospital. Attention is called to a number of items which ordinarily occasion little thought but which tend to produce a state of extravagance, wastefulness of supplies, time, service and money. It would appear to be almost unnecessary to request that bandages, packings and surgical dressings be used sparingly and merely in sufficient quantity to satisfy the surgical end in view. The scarcity of drugs and their consequent high prices emphasize the necessity of relying

upon physical therapeutic measures as far as may be possible without resorting to unnecessary medication. In writing prescriptions every care must be used to protect the patient against needless expense.

The element of wastage as to linens, china, paper, rubber and general supplies merits recognition with a view to reducing such waste for the sake of conserving the finances of the institution.

The shortages, which are now arising in the staff of medical and lay attendants at institutions, make imperative the most careful arrangement of the duties of hospital employees from the office boy to the superintendent, from the clinical assistant to the chief surgeon, with a view to eliminating waste of time and waste of effort.

The medical profession available for civil duties will be decreased to a considerable extent when the full corps of military surgeons will have been enrolled. The amount of serious illness in the community may not decrease, but with a conscious effort and public education there should be an elevation of the standards of public health and a consequent diminution of minor ailments.

The lack of a full complement of physicians must be met by a decrease in illness. Disease itself produces a tremendous waste. In order to offset the economic and social loss resultant from pathological states, it is necessary to fortify the people of the country thru widespread education and training in the laws of health and the principles of healthful living. With a dearth of physicians in certain sections of the country, families will be thrown upon their own resources many times and unless a wider knowledge of hygiene is secured for them the results may at times be exceedingly disadvantageous to their general health.

One of the most certain ways of reducing the waste in hospitals is to lessen the number of those needing hospital attention. The salvage of supplies, of time, of labor, of energy, may be partially brought about thru an intelligent attempt to secure the salvage of health.

Dishwashing.—The importance of setting apart sets of dishes for the use of tuberculous patients and those suffering from infectious and contagious diseases has been emphasized for many years. The possibility of disseminating diseases as a result of the failure to secure the destruction of infective organisms during the process of dishwashing has received considerable attention in medical practice. The numerous laws demanding the use of individual cups, towels and personal appliances are based upon the fact that the transmission of disease thru unclean articles is a danger to the public welfare.

Dishwashing is a household performance which is worthy of study in connection with the preservation of family health. In the realm of café, restaurant, hotel dining rooms or quick lunch places, dishwashing is a matter of public concern.

Manheimer and Ybanez (*The American Journal of Public Health*, July, 1917) describe some observations on and experiments with dishwashing to determine the relative efficiency of the methods of dishwashing by hand and by mechanical apparatus. Their data demonstrate that if manual dishwashing were carefully and thoroly performed there would be comparatively little menace in the use of dishes and silver thus cleaned. Unfortunately, in performance, manual dishwashing is less satis-

factory than is desirable, owing to the fact that the rush of patrons in restaurants occurs during limited hours, and dishes must be cleaned rapidly for repeated use. Speed is demanded rather than cleanliness. The dishwater is not changed frequently enough; the rinsing is inadequate and the drying is performed with towels that would not pass a censor of public health.

Mechanical washing eliminates the uncertain hand power, subjects the dishes to higher temperatures than are possible during the manual process and provides a time of exposure to water of a temperature sufficiently high to kill all non-spore-bearing organisms.

The significance of the deductions with reference to the difference in efficiency between the two methods lies in the fact that uncleanliness in dishwashing has a bearing upon the welfare of the entire consuming public, whether the meals are eaten at home or purchased over a counter, or at a table.

In the average home dishwashing is not a remarkably hygienic process. The water is usually below the temperature necessary for destroying bacteria, because the dishwasher must frequently dip her hands into the pan containing the soapy water. The soap itself plays very little part in the disinfection of knives, forks, spoons, cups, glasses, plates or other table utensils utilized during the preparation or consumption of food. Unclean dish towels are too generally employed for the drying of dishes which perhaps may have been reasonably free from infective material. Rapidity in dishwashing is not unnatural in the busy household where the routine of dishwashing is not regarded so much as a matter of hygiene as a problem in esthetics and where the desire to get out of the house for pur-

poses of pleasure or shopping makes speed a matter of primal interest. Furthermore, the practice of permitting soiled dishes to accumulate or to remain smeared with bacteria breeding detritus, attracting flies or insects and possibly rodents, is hardly conducive to ensuring cleanliness of tableware at the next usage.

It is obvious that the character of cleanliness in homes can be improved only thru the education of the housewife, and by the insistence of physicians that hygienic principles be observed when infectious disease afflicts a household. It is possible to protect the public from general carelessness, ignorance, or haste in public eating places, by passing ordinances demanding that all eating utensils in public places be subject to a temperature of at least 80° C. for one minute before they are utilized by other patrons.

Dishwashing may appear to be a trifling detail but the science of hygiene is built up of trifles. Perfection in hygiene is attained only by attention to the little things.

Industrial Medicine.—The growth and progress in medicine are marked by periods of specialized interest in specific maladies, and investigations of particular phases of human welfare. Step by step, advance has been made in the realm of contagious diseases, infections, vague and indefinite symptom complexes, and diseases due to degeneration.

There has developed a social concept of medicine which recognizes the relation between social environment and faulty social judgment, and the occurrence of accidents and disease. At the present time the vast field of industrial hygiene represents a comparatively undeveloped area for research and discovery. It affords untold oppor-

tunities for constructive public health efforts with a view to raising the standards of health and efficiency of the workers in the industrial army.

The tremendous strain, now thrown upon the industries of this country in order to meet the responsibilities of supplying the needs of a nation engaged in warfare, focuses attention upon the industrial situation with directness and clarity. The evidence at hand is sufficient to indicate that the perils of employment in the arts of peace are almost as numerous as those to which the military forces of the country may be exposed. The manufacture of munitions, aeroplanes, the sinking of caissons, mining, engineering, painting, working in wool, and countless other types of employment are fraught with dangers due to exposure, to insanitary conditions, the inherent toxicity of metals and chemicals and inadequate safety devices for safeguarding employees from potentially dangerous implements.

Harris points out in the September issue of *Medicine and Surgery*, which is devoted to a discussion of occupational diseases, that physicians have not yet realized their moral responsibility in guiding public health officials to factories which are breeding places of disease. Their cooperation is essential in order that active steps may be taken by authorized public agents to secure the abatement of the hazards and to bring about the prevention of occupational disabilities.

It is necessary that physicians become familiar with the symptoms which arise from prolonged contact with poisons, irritating dusts, extremes of temperature, infectious materials, inadequate lighting, long hours of labor and consequent fatigue and the generally unhealthful characteristics of many industrial environments. A large

variety of diseases and obscure symptoms are the direct outcome of occupation. A failure to appreciate the relation of industry to health has permitted various occupational diseases to escape recognition and to be diagnosticated as common diseases which they may chance to simulate in a number of ways.

Quite properly Harris calls attention to the failure of medical colleges to point out the importance of industrial hygiene, while time is devoted to the consideration of diseases which are more prevalent in tropical areas than in the United States. While lectures are being given in many colleges to prepare students for military life there is every reason to believe that it would be equally advantageous to the general public if a larger measure of instruction were given concerning specific and non-specific occupational diseases and accidents.

Industrial hygiene requires specially trained medical men who, in addition to their knowledge of clinical medicine, possess general information about sanitation, factory inspection and sanitary engineering. While the laws of many states require physicians to report occupational diseases, the value of these laws is offset by a lack of familiarity, on the part of physicians, with the nature of occupational diseases. Owing to the lack of definite information, for which the profession is not to be held responsible, it is practically impossible to undertake a systematic campaign for the relief and prevention of this class of ailments.

It is a short-sighted policy to establish institutions for the relief of those who are afflicted by diseases arising from occupation without making equally vigorous attempts to render such institutions unneces-

sary. The responsibility for attacking the problem of the prevention of industrial accidents and diseases should be accepted by the medical profession. Medical colleges should participate in a systematic educational plan to awaken the minds of present day students to the part industrial hygiene plays in the maintenance of public health.

The United States is at present engaged in a stupendous struggle in which the efforts of workers are to be tested to the utmost. With a demand for patriotic application to employment, and motives that should call forth every ounce of energy, the industrial world is striving to secure maximum results in the interests of national accomplishment and national welfare. Under these circumstances, the same patriotic appeal should result in a desire, transmuted into action, for the preservation of the general health in industry. Industrial centers are beginning to recognize the importance of preserving and protecting the health and limbs of their employees. There is a great need, however, for driving home the lessons of industrial betterment and for awakening the medical profession to its paramount importance in the development of modern industrial medicine.

The National Council of Defense is fully conscious of the tremendous problems which lie before it and is making splendid strides towards raising the standards of industrial efficiency, without sacrificing the potential health value of those whose lives are engaged in the accomplishment of the industrial processes upon which the welfare of the country depends today more than ever.

In every industry, in every specialty in medicine there are found opportunities for study, investigation and constructive application. The medical profession may well

become alive to the challenge which industry offers them. Once aroused and conscious of the public health aspects of industrial medicine, physicians will attack their problems with customary force, enthusiasm and resourcefulness. The clinician, diagnostician, laboratory scientist, health officer, factory inspector and legislator will then work in harmony for the enrichment of human life and for the improvement or the conservation of that vital national asset, sound, capable workmen.

Health Education for Negroes.—The general condition of negroes in the United States has long been of considerable public health interest. Statements are frequently made that the death rate among the 10,000,000 negroes of the United States is exceedingly high and there is an implication that this arises from some inherent defects in the negro's constitution or his maladjustment to the environment in which he lives.

A large part of the problem of negro disease and death must be found in their economic and social status. While it is true that tremendous strides upward have been taken, the general stress under which they live and work is distinctly unfavorable to the maintenance of health. Negro illiteracy during the past fifty years has decreased from over ninety per cent. to thirty per cent. (Negro Education, *Bulletin Number 38, Bureau of Education*). The relative ignorance still remaining and the poverty of a large percentage of the negro population are significant causes of the fact that the mortality rate of colored people is twenty-four per cent. as against fifteen for the white population.

The emphasis given to the benefits of

public education and the development of health indicates the urgency for greater advantages in elementary school education in order to drive home the truths concerning hygiene. In the language of the Southern Education Association, 1907, "the education of the negro in the elementary branches of education should be made thoro and should include specific instruction in hygiene and home sanitation, for the better protection of both races."

The mortality rate of negroes is decreasing and naturally at a more rapid rate than is found among the whites because the mortality rate of the whites has more nearly approached the irreducible minimum. To illustrate, while the mortality rate decrease from 1900 to 1910 was 3.2 per 1,000 among the whites of Boston, it was 3.6 for the negroes; in New York City 4.6 for the whites, 6.2 for the negroes; in Chicago .2 for the whites, .7 for the negro; in Indianapolis .9 for the white, 1 for the negro; Kansas City .6 for the whites, 2.2 for the negro; Philadelphia 3.6 for the white, 3.3 for the negroes; St. Louis 2 for the whites, 4.9 for the negroes. In Southern cities where the percentage of negro population is much higher and educational facilities are manifestly inferior the lowered mortality is represented by Atlanta 3.1 white, 1.9 negro; Charleston, S. C., 4 white, 5.1 negro; Jacksonville 9.8 white, 8.8 negro; Norfolk 2.3 white, 8.7 negro; New Orleans 4 white, 8.2 negro; Richmond 5.6 white, 7.5 negro; Savannah 2.5 white, 1.9 negro.

The further significance of these figures is apparent upon recognition of the fact that only 8.1 per cent. of the total negro population in the sixteen Southern states between the ages of six to fourteen years is attending the elementary schools. The lack of education facilities is of paramount

importance in determining the lack of knowledge of the methods of healthful living which, regardless of vital stamina, induces a high morbidity and mortality rate.

Figures of the Metropolitan Life Insurance Co. for the year 1916 demonstrate that the death rate from causes associated with child birth among women, ages fifteen to forty-four, decreased among white women from 70.1 per 100,000 of their white policy holders in 1911 to 62.6 in 1916. Among colored policy holders of the same age grouping, the rate of 88.4 in 1911 was reduced to 70.4 in 1916; thus there was a decrease for the white women of 10.7 per cent. and for the colored women 20.4. It is obvious that similar influences must have been at work to reduce the mortality of colored women as among the whites. The general conditions resulting in death were practically identical for the two classes.

With the drafting of large numbers of negro men for the service of the United States there will naturally result a distinct lowering of the economic status of the negroes who have not yet reached a reasonable standard of income to establish healthful living. The granting of separation allowances, mandatory assignment of pay, and insurance provisions for soldiers will counteract to a large extent these factors contributing to physical deterioration.

The most important contribution which can be made to the health and welfare of the negro population lies in an extension of educational opportunity, with an adequate provision for properly trained, well paid teachers in modern up-to-date school plants spreading the gospel of health in the elementary schools.

The high death rates of negroes emphasize the need of thoro instruction in

hygiene in school houses that are well ventilated, properly cleaned, possessing sanitary toilet facilities, and which will introduce a type of education best fitted for the physical welfare of the colored people. It is a helpful sign that the mortality rate of negroes is falling in those sections of the community where the most attention is paid to public health education. In the Southern belt the mortality rate of the whites compares very favorably, on the whole, with that existing in Northern cities and states, and this fact is thoroly indicative of the possibilities of the Southern sections of the country for achieving low rates of mortality for the general population. The direction of attention to the same procedures and types of education offered to the whites with a view to providing them for the colored population has been productive of valuable results. The educated and trained negro is not a health hazard to the general population.

The entire problem of the health education of negroes is to be regarded as involving the general welfare of all types of people in the community. While considerable importance has been placed upon the Americanization of the immigrant it must not be forgotten that the colored race, that is forty per cent. illiterate, demands equally sincere and earnest attention, particularly in view of the fact that the negroes outnumber any immigrant group of this country.

Since the present high mortality of negroes is due to the lack of public education more than to any other single cause, the continuance of this avoidable factor in the negro death rate is a reflection upon the public health movement which cannot be explained by the statement that there are insufficient funds to provide the necessary school system. The negro is far less a

public health problem than are the schools in the community of which he forms a part.

The Examination of Recruits.—The examination of candidates for admission to the army has placed a great deal of responsibility upon the medical examiners of the various boards. If a candidate is examined carelessly, or by an untrained medical man, the results may be serious, and in any event, will be troublesome. The examiner, therefore, should be thoroly competent and well fitted for his task. The fact must be borne in mind that when war was declared against Germany, only a very small proportion of our medical men, those then in the army, had had any experience in examining men for military service. Of course, army medical officers were wholly inadequate in numbers to cope with the situation when the draft was put into effect. Indeed, they were hardly numerous enough to examine properly the recruits for the regular army. Consequently, the burden of examining the drafted men fell upon the rank and file of the medical profession. The average medical practitioner, on account of lack of practice, is not particularly well versed in the technic of medical examinations, and knows less of examination for military service. There are certain points in the medical examination of recruits which the man who has had no extended experience in this direction naturally will not know, altho, of course, he will be greatly aided by his general experience and common sense. For example, he will be aware that good vision is a *sine qua non* for admission into the army, even tho he will not be at first conversant with all the details of examination. Hearing is also im-

portant and in some branches of the army acute hearing is very necessary. However, so far as hearing is concerned, a good deal must be left to the discretion of the examining physician, as the problem is dependent upon the kind of duties which will fall to the lot of the recruit. It goes without saying that the eyesight of the candidate for the aviation corps must be absolutely beyond reproach and that hearing must be good.

The condition of the feet is important, but at the same time there are some malformations which can be rectified with comparative ease, while there are other defects which will not be an insuperable obstacle to military service.

A history of tuberculosis has practically always been a sufficient cause for rejection, as it should be. However, it is not the intention here, even if the writer were capable of so doing, to lay down rules for medical examination for military service. The point upon which it is desired to lay stress is that in the preparation of a large army, to be built up from a civilian population, a vast responsibility rests upon the medical examiner. They are the arbiters upon whose intelligence and fidelity may hang the fate of this nation, and in the face of existing conditions, even of the world. Moreover, when it is further considered that the physicians of this country with very few exceptions have had no experience in military matters, it will be recognized that the situation is much more complicated than in the case of countries in which universal conscription has long been in vogue.

There should be no cause for wonder if many errors of examination were made, and if large numbers of men were passed who were unfit, or *vice versa* were rejected who would have made good soldiers. Sufficient

time, however, has now elapsed to pass a fairly accurate judgment upon this matter. It appears that, on the whole, the physicians who examined the drafted men have made remarkably few mistakes. In the large majority of instances, they have shown themselves to be not only excellent diagnosticians, with keen appreciation of the physical attributes required of a soldier, but have also proved themselves to be possessed of a considerable degree of discerning psychological powers. Indeed, the results of their examinations, as demonstrated by subsequent events, have brought out in an illuminative manner the dominant qualities of the American physician. Confronted with an unprecedented state of affairs, and with circumstances entirely outside his usual sphere of activities, he has exhibited, in addition to a sound knowledge of diagnosis, a prescience, a resourcefulness and an all round efficiency wholly in keeping with the history and traditions of the American medical profession.

The United States of America has reason to be proud of its medical men and the part they have played in the complex process of providing a national army from non-military stock. And when the miracle is complete, there will be no army in the world that will be superior in its physical qualifications.

Casualties Among Soldiers and Army Medical Officers at the Front.—A prominent feature of the underground and insidious campaign which is being carried on by enemy sympathizers, and by those who, for one reason or another, are opposed to the participation of the United States in the European war, is the broadcast dissemination of statements calculated to

weaken the determination of the drafted men to enter the conflict with ardor and strenuousness. In fact, a good deal of the propaganda has the earmarks of absolute treason, since it is definitely intended to create a strong sentiment throughout the country against the despatch of American troops to the seat of war. The means devised to attain the conspirators' ends are various and inspired by extreme cunning. Efforts have been made, in some instances with considerable success, to influence labor to take a stand against war measures. As all know, these endeavors have on occasion taken the form of violence, arson, destruction and so on. Plants have been destroyed, provisions and cattle burned, and means of transport wrecked.

After all, however, the most harmful ways in which these enemies of their country have tried to defeat the aims of the war have been the sending forth by word of mouth, and by journalistic and other literature—if it is worthy of such a name—supposed statements of fact impugning the good faith of the Government, and grossly exaggerating the dangers of the conflict.

The papers favorable to the enemy, since America has taken her place as a defender of democracy and of democratic principles, have been compelled by the force of intelligent public opinion, and when recalcitrant, by sterner measures, to alter their methods. But unfortunately there are still many publications which, altho on the surface loyal and patriotic, are using every underhanded device and means to embarrass and to tie the hands of the authorities. A favorite trick of such journals is to dwell upon the dangers of the passage to Europe, and the diseases and hardships which our men must undergo at the front. It is freely stated in some of these disloyal sheets that the mor-

talities of the soldiers in the trenches is enormous, and that the greater proportion of those who go abroad will never return. In order to agitate parents and friends, stress is laid upon the social diseases and the irreparable injury to the health and morals of the young soldiers as a result of bad associations to be met in Europe. While printed accounts of this description necessarily do an immense amount of harm, perhaps the false news which is propagated verbally everywhere is even more harmful. There are individuals in all parts of this country whose entire time is devoted to spreading lies concerning the conditions at the front, in order to warp the sentiment of the community. Most of these foul traitors pose as Britishers, Canadians or Americans, and profess to be acquainted at first with all the details of the situation. They tell their tales with an air of verisimilitude very apt to deceive anyone, but especially the young, untraveled and unread American; these tales are passed from mouth to mouth, and like a rolling snowball they gather weight and substance on their journey, until the stories are so harrowing and impressive that they are bound to disturb and upset those who hear them.

It is imperative, therefore, that efforts should be directed at once against this "carnival of falsehood" and that the true facts of the case be placed before the public.

In the first place, it may be definitely and decisively stated that the dangers of the overseas journey have been greatly overestimated. Since the war began Canada has transported backwards and forwards 500,000 men or thereabout and the loss of transports and life have been ridiculously small, little if any above the normal. The condi-

tions have been almost as satisfactory with the Australian contingents, altho the Australians have lost a few ships and men in transit, because they have traveled largely thru the Mediterranean where the activities of the stealthy undersea pirates are much greater. Judging from the records of the past three years, however, the dangers attendant on the transport of troops from America to Europe are by no means great. As for the menace to life and health in the trenches, and at the Western front generally, there has never been a war in which sickness has been so conspicuous by its absence, as in the present one. Epidemic disease on a large scale has been practically unknown, and the health of the British army as a whole has been much better than that of the people in many salubrious towns in times of peace.

With regard to the casualties brought about by injuries and war wounds, the mortality, incapacitation and invalidism therefrom have been by no means excessive, when everything is duly considered. Indeed, altho so-called scientific warfare has produced some of the most infernal machines and devices ever originated in the brain of man and put into practice, and while of course, a very large number of men have been killed and fearfully maimed, yet when the size of the armies engaged and the awful measures employed have been taken into account, both the death rate and morbidity rate from wounds have been surprisingly small.

False Reports of Medical Losses.—

Among the tales made out of whole cloth with which the American people have been bountifully regaled, none has been more despicable, albeit more easily refuted than

that of the mortality of army medical officers. It has been freely asserted that the official reports of British Army authorities gave out that no fewer than 6,000 of the R. A. M. C. had lost their lives in the war. This statement has proved to be a very false one, for Colonel Goodwin, R. A. M. C. in an address given a few days ago at Cornell University, discredited it and showed its ridiculous character. Clearly it was absolutely untrue, for the whole British medical force only amounted to 12,000. It was understood at the time Colonel Goodwin gave his address that about 60 medical officers had been killed and 190 wounded.

Of course, the reasons for spreading this falsehood have been obvious. It was hoped that the account of this slaughter of medical officers would result in preventing the enlistment in large numbers of American medical practitioners. It did not have this effect as anyone should have known who knew anything at all concerning the character and psychology of the American physician. American medical men have offered their services in a generous manner to the Allied nations, as well as to their own country, and by so doing have relieved the strain which has been placed upon the devoted band of British and French surgeons and physicians who for the past three years have grappled with the vast problems before them.

It may be stated in conclusion, therefore, that despite the propaganda which have been conducted from one end of this continent to the other, with a view of confusing the issue and of preventing this Nation from putting forth its full strength to crush autocracy and uphold freedom, the dangers

which await American fighters in this cause, while great, are by no means of the appalling nature which enemy sympathizers pretend them to be. The lies as to the massacre of army medical officers have been "nailed to the mast," and it may be taken for granted henceforth that any man who goes about telling gruesome stories of what American soldiers will undergo, or how many American doctors will be killed, is not only worthy of no credence, but an individual whose statements will allow but one conclusion, that he is a traitor of the most dangerous and detestable type.

FRIENDSHIP.

"When a man ain't got a cent and is feeling
kind o' blue,
And the clouds hang dark and heavy and won't
let the sun shine through,
It's a great thing, my brother, for a fellow just
to lay
His hand upon your shoulder in a friendly sort
o' way.

It makes a man feel curious, it makes the tear-
drop start,
And you sort o' feel a flutter in the region of
your heart,
You can look up and meet his eyes, you don't
know what to say,
When his hand is on your shoulder in a friendly
sort o' way.

Oh the world's a curious compound with its
honey and its gall,
With its cares and bitter crosses, but a good
world after all,
And a good God must have made it, leastwise
that's what I say,
When a hand is on my shoulder in a friendly
sort o' way."

—James Whitcomb Riley.



"Use Us All, Uncle Sam!"—When war became inevitable and the American people found it impossible to keep out of the conflict that had been raging for nearly three years, there was probably not an American physician in the whole land who did not feel a soul stirring desire to "join the colors." Many were placed so that they could drop everything and give themselves unreservedly to the country's service. Others at great financial sacrifice, but only to themselves, were able to respond to the urgent call for medical men. There have been a great many, however, who, much as they have yearned to enter the army or navy and embark upon "the great adventure" have been obliged to stifle their natural impulses and desires to take an active part in the greatest struggle for humanity the world has ever witnessed. Dependent families, contractual relations, business and professional obligations, and many other conditions have made it impossible for a large proportion of our American doctors to give up and forsake their immediate duties without causing serious deprivation to dear ones, deranging business, or imposing grave hardship on employees. Much as they have wanted to do their part in a military way, circumstances have made it entirely out of the question, so long as joining the medical forces has entailed complete withdrawal from their immediate fields of activity and renunciation of all civil relations and duties.

The authorities have recognized these conditions and shown a commendable intention to disturb medical practice as little as possible. The public has been assured repeatedly that every care would be used to avoid jeopardizing communities by impairing their medical resources. Again and again medical men have been told that they could serve their country far better in many instances by remaining at their posts than by entering the army medical service. The truth of this is self evident, and a doctor does not have to don a uniform to prove his patriotism. To the everlasting credit of those who have been most active in building up the Army

Medical Reserve, and urging physicians to enlist, it can truthfully be said that the civil obligations of the bulk of the profession have never been minimized. On the contrary, every physician has been requested to give the most careful thought to the matter and decide for himself as to which course he ought to take. No medical man has been wanted for the Medical Reserve whose circumstances made it desirable for him to continue to fill his place in civil life. Every effort has been made to impress the profession with the fact that no criticism could be whispered against those who, crushing down their natural inclinations to enter upon a line of work intensely attractive to every doctor with red blood, have nevertheless had the moral strength and courage to keep on at duties far less attractive but more essential and imperative at the moment.

Those who have had no such ties or obligations are the men who have been sought for military service. Recent graduates, internes, men who have been unfortunate in choosing their locations and have not succeeded financially, physicians with independent incomes or whose sources of income would allow them to be away for a year or so, and many others whose civil duties are not indispensable to their communities, are the medical men who can respond to the demand for army doctors. That they should come forward and accept commissions with joy at the opportunities afforded, admits of no argument. To such men, this chance to serve their country represents the apotheosis of medical service. Those who neglect it will miss the greatest, most inspiring opportunity that has ever come into their lives.

Opportunity for All.—But why deny some part of this opportunity to those whose duties prevent them from accepting army or naval commissions? There are thousands of capable physicians, skilled not only in medicine and surgery, but also in administrative and executive matters, who could give a large part of their time and efforts to army work, so long as they could remain in or near by to their communities, and keep in touch with, or under surveillance the particular work or obligations that prevent their enlistment. There must be an abundance of army medical work which these physicians, especially those in New York City and other large centers, could do by giving

four to eight hours of their time each day. The examination of recruits, the care of supplies, the organization and direction of special kinds of medical service such as venereal, psychopathic, nose and throat, tuberculosis, orthopedic, etc., would seem to offer special possibilities. When the wounded and convalescent begin to return from France, as soon they will, the need for medical care will be great. Another line of activity in which there are wonderful possibilities for medical service is in looking after those young men who for one reason or another have been found physically unfit for military service. A large proportion of these thru suitable hygienic care and medical treatment can be restored to a physical condition, which if not perfection, will nevertheless fit them for a great many of the duties associated with our military undertakings. Men in unlimited numbers are going to be needed before this war is over. Every man of military age who is not an invalid is going to be needed in some capacity. To allow young, sturdy men to remain "in the discard," for slight flat foot or other foot troubles, small hernias, weak eyes, defective hearing, or many other conditions that can be remedied, if only in part, is to neglect our resources. Intelligent medical direction can accomplish wonders in making a great many of these men exceedingly useful—in fitting them for places that will be of the utmost importance. Our medical men with the army forces will not have the time to devote to this work. Many of our civilian doctors, however, would like nothing better than to take up this work and carry it thru to success. There are numerous other ways in which the "stay-at-homes" could serve the Nation. We earnestly hope, therefore, that the Surgeon-General and his associates will recognize the possibilities that exist in placing the whole medical profession on an organized basis, and in thus using the thousands of highly trained and competent medical men who for obvious reasons are denied joining the army or navy medical services, but who would jump at the chance of engaging in the kinds of work we have outlined.

Our Country Has a Long, Grim Struggle Ahead of It.—Dark days, days of apprehension and anxiety, of doubts and fears are sure to come. America has the greatest, most stupendous problem in all its history

before it. Every resource must be made into an asset if the American nation is going to emerge victorious from this world conflict. The large number of American doctors who are forced to remain more or less close to their civilian posts will constitute one of the Nation's greatest assets if their services are adequately utilized. An efficient organization is urgently needed and if this can be effected in the near future great and far-reaching benefits will be realized. Properly organized, without in the least jeopardizing the interests of the civilian population, provisions can be made whereby convalescent and rehabilitation hospitals can be maintained, special medical services conducted, much work done preliminary to or supplementing the activities of the army and navy medical officers, rejected men followed up and fitted for military service of some character, and many other matters undertaken that are going to be of the greatest importance before peace comes. It is entirely probable that a well perfected organization of the civilian practitioners, in addition to the advantages outlined, would also make possible the release of a good many doctors for army service.

The whole proposition seems to us to be one of great importance. We know there are countless medical men who would welcome the opportunity to "do their bit." We trust, then, the Surgeon-General will soon appoint a commission to arrange for placing the available civilian practitioners of the country on an organized basis with divisions of service, etc. As to whether or not military rank should be given to these medical men who take up part time work, we are inclined to favor some such way as the Red Cross ranks its workers. A plan could be worked out with little effort and a special designation devised which would be fair to the members of this proposed organization of civil physicians, and avoid any possible confusion or conflict with the army medical service. The whole question resolves itself into making the utmost of our trained man power and having it ready for the hour of need that is coming. Germany owes everything to organization and America can well take this lesson from the enemy, if no other.

The foregoing, of course, does not go into the subject in detail, but we believe it voices in a general way the opinions and desires of many American doctors who

long for a chance to prove their devotion to America and all it stands for.

"Use us all Uncle Sam! Without requiring us to neglect our present bounden duties and obligations, let us fit in where we can in this great undertaking of making the young men of the United States of America into healthy, sturdy soldiers, of keeping them free from disease, of helping them back to health and usefulness when wounded, and overlooking nothing of an honorable, humane character to insure the downfall of our enemies and the triumph of our country: Use us all, Uncle Sam, use us all!"

A Mayor Who Has Had the Welfare of the People at Heart.—The health, physical and moral, of the people is the supreme law. Oliver Goldsmith put this obvious aphorism in somewhat different words:

"Ill fares the land to hastening ills a prey,
Where wealth accumulates and men decay."

The above lines express with more or less exactitude the state of a country or of a locality, in which industrialism holds full sway, and in which the heaping up of riches has become of more consequence than guarding and preserving the moral and physical health of the workers. With such false views of economy or of true prosperity, there are those who in the mad scramble for wealth are apt to disregard, or to be indifferent to the needs of their employees. So long as they can pile dollars upon dollars with satisfactory rapidity, they reckon little of the conditions under which live the workers who alone make it possible for them to become prosperous. The result of this sweating of labor, with its concomitant features of bad housing, overcrowding and other insanitary conditions, is ill health and a steady deterioration of physical, mental and moral standards. In the long run of course, it is "a penny wise and pound foolish" policy, and if continued is bound to eventuate disastrously. It will be a case of "wealth accumulating" and "men decaying," until they have so far decayed that they will be able no longer to act as effective agents in the accumulation of wealth. Thus the policy of not caring for the health of the workers is inherently unsound, and wise are the men who are aware of this fact. Unless the workers, and perhaps the manual workers in particular, are well fed, well clothed and well housed, indeed, enabled to live under sanitary conditions in every way,

their productive powers will be greatly decreased, and in course of time, they will be a burden rather than a source of profit.

Mayor John P. Mitchell of New York City has thoroly understood the force of this point of view, and during his term of mayoralty has exerted himself to the utmost in his effort to promote the cause of public health, which is that of the workers. Perhaps no mayor of New York has ever cooperated so earnestly and heartily with the Department of Health. Dr. Goldwater has testified to the willing support that he was accorded by the Mayor while he was at the head of the Department, and his successor Dr. Emerson and his coadjutors have been given practically a free hand, and generous financial assistance in their efforts to safeguard and improve the health of the people of New York. It must be borne in mind that the good health of the inhabitants of a city or of a town is of infinitely greater importance than the giving out of political jobs, or furthering one's political ambitions in the underground manner which appears so often the custom in this country. Mayor Mitchell has the highest conception of the responsibilities of his office, and has employed his great influence, not in furthering his own ends and the aims of any party, but in trying to elevate the physical, moral and mental status of workers and the people generally. It may be stated, therefore, that Mayor Mitchell deserves the whole-hearted support of the medical profession, in that he has been, in word and in deed, an upholder of the teachings of health and has succeeded in rendering New York a very much better place to live in during his tenure of office. He is one of the few public officials today who thoroly appreciates the earnest, self-forgetting work that the medical profession has been doing in the effort to improve the health of the people and thereby raise the standards of living. Mayor Mitchell can be counted on not only to take no backward step in matters pertaining to the health affairs of New York City, but what is no less gratifying, to continue to give his active aid and cooperation to every intelligent effort to solve the great problems of public hygiene and sanitation still before us. To fail to keep such a man at the helm of the most important city of the Western Hemisphere would be a calamity, not alone to the people of New York, but to the whole country.



PRIMARY FACTORS GOVERNING NORMAL NUTRITION; MASTI- CATION; DEGLUTITION.¹

BY

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"Thou shouldst eat to live; not live to eat." Mastication is a voluntary act; deglutition is a complicated and reflex one, completed independently of the will of the individual. Moist food, a pleasant taste, and a proper mental attitude facilitate the passage of food into the esophagus. Appetite, hunger, attractive food, good surroundings stimulate mastication, salivary secretion and deglutition.

The primary object of mastication is to minutely subdivide or pulverize the food. The object of this is to facilitate swallowing, and to insure intimate admixture with the digestive juices. This promotes the excretion of saliva which is an alkaline solution. The insalivation of food stimulates both the heart and circulation, and has a very beneficial influence upon the teeth.

Mastication is facilitated first by "cutting up" of the food, next by prehension of the teeth and trituration by the molars. Reflexly, mastication increases gastric secretion and motility. If we masticate our food thoroly we prevent over-eating. "A sur-

feit of the sweet things, the deepest loathing to the stomach brings" said the Bard of Avon.

Swallowing is extremely easy with soft, moist food and with such food there is a tendency not to masticate. Swallowing is difficult with tough, hard, dry food; this stimulates mastication and trituration, and such food must be well prepared before being swallowed.

Insurance of admixture of the digestive juices is only attained when the food is finely divided. This is one of the reasons why fresh bread is indigestible, because it eludes the grinding of the molars. Stewed or boiled cabbage shares the same fate because it is rarely chewed; whereas we frequently find that fine slaw is readily digested. Spinach is easily digested because it is nearly always served minced. Some foods chemically indigestible to certain persons become digestible by the greater insalivation which comes from prolonged mastication. All things being equal, food well subdivided is digestible.

Mastication promotes the secretion of saliva and insalivation of the food. The saliva is one of the most constant chemical compositions of the human body. It should always be remembered that it is the first step in the digestive process, and is the first digestive secretion. Without proper insalivation the really essential first step to

¹Read before the Louisville Medical Club.

digestion has not taken place. It is the beginning or basic stone of nutrition. We should remember the old adage that "well begun is half done." The saliva acts efficiently on starch, hence its very careful incorporation with the food is needed. Few starchy foods become indigestible if well chewed. This is due to the action of the saliva, and where the food is well insalivated and rendered more alkaline the time of starch digestion in the stomach is greatly increased. Moreover, the presence of saliva in the stomach stimulates the secretion of gastric juice.

It is an interesting observation, little considered by the physician, that mastication reflexly increases the general circulation. A more abundant blood supply is brought to the stomach and the intestines when thorough mastication has taken place. In its influence upon the teeth mastication plays a very important part. If, in the healthy, mastication were thoroughly indulged in, it would be found that the muscles, ligaments, bones and teeth roots are flushed with blood, hence ample development takes place in the gums and teeth. This is one of the reasons why the teeth of primitive men were larger, stronger and smoother. Primitive men rarely had nasal disease, and pyorrhea alveolaris was practically unknown.

The causes of deficient mastication should be headed with the statement that carelessness and thoughtlessness are the worst features with a laziness that is found in hastiness as a contributory factor. The softness of the food, for this is the "age of pap," also contributes to deficiency of mastication. Most people (especially in America) avoid hard food, and therefore as a rule have defective muscular apparatus connected with the mouth and jaws. We

are a nation of people who have bad teeth and false teeth. Teeth can oftentimes be preserved and kept in good condition by the eating of rough and hard food.

There are some people temperamentally, psychically or by their own actions or folly made ill because they will not complete the ordinary simple process of mastication. These people are disposed to hurry over their food, are nervous, restless and have not the time to eat. They become worried, are obsessed people who eat too rapidly. "chewing food of sweet and bitter fancy." In individuals the subjects of the psychoses we find that the food is rarely chewed, due to lack of attention and concentration. This is the age in which there is no deliberation, no time for thoroughness, no time for thought, no time for mastication. We oftentimes literally force food into the stomach; that is to say, we have too large a lunch in proportion to the time in which to eat it. Add to this a dirty mouth, dirty teeth, infected gums, a foul tongue, and you have an unwholesome mass to put into the stomach, with the prospect of further fermentative action. The buccal cavity under these conditions becomes acid instead of being alkaline.

Another factor which plays a very important part in digestive disturbances is failure to drink plenty of pure water between meals. Failure to masticate the food favors both mechanical and atonic ectasia or dilatation of the stomach. Failure to masticate with the introduction of large masses of food into the stomach tends to produce irritation of that viscus.

Fletcherism is the foolish opposite to what has just been mentioned. Horace Fletcher, a neurotic and broken down individual, thought by eating much less and chewing his food until it was liquid, and by

slowly sipping all fluids, that he could regain his health. Why it should have been called Fletcherism any more than Gladstonism I do not know excepting thru the influence of the lay press. Gladstone took the very sensible attitude that thoro and complete mastication of food was essential to digestion, but Fletcherism is overdoing it. It is just as important for the stomach and the intestines to do their work as it is for the teeth and mouth to do theirs. So we must strike between in the happy medium, *i. e.*, between the Scylla of over-mastication on the one hand, and the Charybdis of deficient mastication on the other. The chewing of food until it becomes simply pap, without taste and without the pleasure of eating, to my mind tends to produce a morbid introspection of food, and this is far more serious than the benefits to be derived from extreme Fletcherism.

I have always thought the happy medium was a reasonable amount of a mixed diet, palatably and properly cooked; the proper use of the knife and fork; the reasonable mastication of the food itself; the avoidance of bad psychic influences at the table; ample time in which to eat; with dental and corrective measures where necessary.

Rickets.—Pituitary extract has been recommended for young children with rickets.

Stomatitis.—As an internal remedy in stomatitis the following may be found useful:

℞ Bismuthi subnitrat̄isgr. xv
 Resorcingr. v
 Glycerini℥iiss
 Aquæq. s. ad. fl. ℥ii
 M. Sig.: Teaspoonful every two hours.
 —*Critic & Guide.*

PAINS AND ACHES; CHARACTERISTIC OF FULL MATURITY AND EARLY DECLINE.¹

BY

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At about the period of full maturity general health should be, and usually is, fairly good; the individual having reached a state of stable equilibrium.

Under moderately favorable circumstances a man or woman of common sense has then learned of any weak points, has made allowances for them, has economized assets, conserved equipment and become adjusted to things as they are.

In spite, however, of judicious self attention, there often arise half pains, achinesses and non-sensory disabilities with latent sensory disturbances (passive tenderesses). Some of these are not recognizable as frank pains or even tenderesses, yet none the less are due to an underlying sensory disturbance.

No clear consciousness may occur of pain yet a partially sensory disablement may exist, a disinclination to activities which on expert scrutiny will be found due to a latent tenderness or distress when the parts move or are moved.

This misery may prove to be in a joint when passively moved beyond its customary ambit, or in a part not concerned in ordinary motions yet capable of being brought into the field of direct or indirect movement, either by volitional acts or by being made to move passively, *i. e.*, by manipulation by another.

¹ First Paper: Descriptive and Explanatory: Later will follow one on recommendations and methods for relief.

It is common in my experience to find explanations along the lines indicated of a large variety of vague disabilities from fibromyositis. Treatment oftentimes relieves not only the state recognized or complained of, but often serves to afford unexpected relief in other directions of which the sufferer was not acutely conscious but only vaguely aware.

In short it has come to be my opinion, based on a long continued attention to this subject, that an expert physician can render valuable service when permitted full opportunities to thoroly overhaul any one who is below par from this standpoint of latent, sensory disturbance.

The search involves chiefly an exploration thru certain manual procedures, a sort of special palpation, a tactile apperception, a manudiagnosis, never neglecting to consider antecedent or contributory disease states, metabolic and other.

By appraising the factors thus revealed and approaching the problem in its entirety from this angle, oftentimes the needful key is found to heretofore unrelieved states. These left over, or "pigeon holed" afflictions, may have been clearly defined, located and labeled but they continue to obstinately persist until the basic factor is found and relieved.

We here enter the domain so successfully preempted and exploited by the proponents of manipulative procedures as the one and only form of cure, bone and joint adjusters and those who make well by pulling, pushing or poking, or by other forms of "laying on of hands." Their successes may have been overestimated but it is the part of wisdom to appropriate a leaf from any good and helpful book of knowledge. To "pooh-pooh," them merely brands the pooh-pooher as a conceited igno-

ramus who fails to grasp the spirit of therapeutics.¹

In the hope of making my subject both readily comprehensible and, if possible, interesting, I will employ the method recommended by newspaper writers and use the story form. The ubiquitous subject of *backache* will serve as a string to hang my beads of explanation upon. It will serve later as a means of offering recommendations not only for its own relief but for that of others.

Backache may be, and often is, the form in which large and varied congeries of weaknesses, constitutional faults, developmental errors, metabolic disorders, disadvantageous postural habits are displayed. The form which many of them assume is *au fond* an anomaly of nutrition to which the comprehensive term fibromyositis helps to graphically present.²

The popular and inexact term "muscular rheumatism," "rheumatic states" are made to cover many of these pains and aches. An enormous amount of conjectural explanations are offered, some excellent empirical recommendations, and some ludicrous assertions.

Painfulness in the static structures in particular (here mainly under consideration) and in many other correlated structures, is now explainable on a basis of

¹ See "Drugless Healers, their Bane and Antidote," *N. Y. Medical Journal*, Sept. 8, 1917.

² A search thru medical literature with a view of placing this subject of fibromyositis on a succinct and practical basis (published elsewhere) has revealed the fact that, however much clinicians deplore the use of the term "rheumatic states" it "will not down," so fixed has it become in both popular and medical phraseology.

After sorting and mulling over, much of this enormous mass of evidence and conjectures, I was both instructed and greatly amused to read a book entitled "On being done good" by a newspaper man who searched the seven seas for personal relief and therein related his experiences.

hypo or hyper function or tonus in certain ductless glands (internal secretions). In particular the problem of reducing the products of metabolism to benign and eliminable end products. That is a long story in itself and deserves particularized and cautious presentation.

The subject of developmental faults exerts a bearing on the whole question of static integrity, on balance and loss of balance, in those opposing or mutually supplemental duplex mechanisms whereby inequalities exist in nicety of poise between the correlated (mechanical) agencies furnishing support.

It will appear quite obvious upon reflection, that in an individual so nicely constructed that levers, pulleys, guy ropes, sockets, joints and mechanisms for power application and transmission are practically perfect, there will be no undue strain on any one part and hence no cause for maladjustments, hence no "referred pains."

If there be, however, any irregularity in the make-up or distribution of the framework, any lack of symmetry in the fixed structures (bones), their attachments (ligaments, aponeuroses—fibrous structures) or other vitalized mechanisms for the application and distribution of power, the tendons and muscles, especially in their junctures, there will be found too much pull on some and too little pull on others and the result must be a strain. Here is the genesis of the referred pain.

When such a strain exists in a sentient machine (*e. g.*, the human body) it signifies much more than in an insentient machine. Special sentient mechanisms are also to be reckoned with, *e. g.*, nerves, nerve centers and all that go to constitute intelligence, with emotions, (reacting on motions) nutritive repair, vitalized actions

and reactions inducing fatigue states, exhaustion and consciousness of general sufferings (thru coanesthesia) quite independent of local pains and aches.

Given a small degree of structural asymmetry, inherent or acquired and add to this a moderate degree of strain, long continued and unescapable, distress or misery must result. It is true our powers for compensation and adaptation to such asymmetric distribution of force is enormous and amazing. While the body and mind are able to remain in good poise, action and reaction being smooth and consecutive, it is quite possible thru judicious adaptations to make all needful compensations. Hence where one of these states resist treatment it is a safe bet the needful measure has not been applied and awaits application.

There must be added some other agency to light up the abnormal sensory reactions. This is supplied by changes in the biochemistry of the fluid and nutritive interchanges. Poisons are being formed in the muscles all the time, even during perfect nutritive poise, and these are being sent on to the eliminating organs in suitable shape for passing out and away. Let this smoothness of interchanging and housecleaning be interfered with unduly, then some kinds of poisons are retained and in forms to react hurtfully upon the sensitive centers. Distress or tenderness follows. The three products of metabolism that cause fatigue are (according to F. S. Lee) sarcolactic acid, novopotassium phosphates and carbon dioxide. These are acid in their reaction whereas the reaction of a muscle in repose is alkaline.

The causes are manifold. They begin with errors of diet, omissions of motor discharges or inadequate yet often excessive.

Some are due to wrong foods, some to

wrong practices, in behavior, in hygiene, aggravated by undue exposure to cold or to moisture, too much or too little exertion, hence to fatigue states and above all to powerful but unconsidered psychic perturbations, emotional reactions, with characteristic disturbances all along the line of delicately poised function beginning with the adrenothyroid mechanism, the blood, the vital fluids and the respiratory interchanges. The skin is of paramount importance in connection with muscular (or fibromuscular) pains. The skin is a defense mechanism of peculiar significance and, for the reason that therein resides by far the major portion of the sensory nerves. Thru it circulates the major portion of the blood (peripherally), this being called the "great skin heart." Remedial effects produced on the skin exert marked influences on metabolism, *e. g.*, heliotherapy and its artificial analogues "sun lamps," the Kromayer or the Negelschmidt.

Chilling of the skin, especially while the body is overfatigued, depressed from any causes, its blood vessels surcharged with self-formed poisons, is a prolific source of pains and aches. While it is not claimed that all backaches are traceable to fibromyositis of some form, location or degree, it is fair to assume it to be a common denominator for painful states in this and in other areas.

There must be some common or generic starting point for distresses so similar in many particulars. As an observed fact in most instances of backache, there can be found and located an area, or point of tenderness, on deep pressure. Other causes are contributory or aggravative. Among the chief of these are postural faults, so-called "static back strains," anomalies of structure of the nature of acquired deform-

ity, such as curves in the spinal column. The pain or ache may be not only in the back but between the shoulders and in the buttocks, notably the "sciatic," in the legs or arms; most are evidences of "transferred pains." Pendulous abdomens, relaxed belly muscles, may and do contribute susceptibilities by exerting a drag on structures inadequately supported.

There may coexist more or less pronounced disorders in the digestive organs, in the reproductive organs (in women, traumata or congestive states of uterus, ovaries, etc.), in the kidneys and in the nervous system. The blood may be at fault in demonstrable directions. Conditions of environment may be unfavorable; the home, the nature of the occupation, involving eye strain, ear strain, faults of the upper respiratory tract, the teeth, impactions, pyorrhea and focal sepsis from non-sensory abscess.

The next most probable common denominator in backache, and in many other localizable aches and pains, is injury of some kind, trauma. So commonly has some form or degree of shock, fall, bump, twist, wrench, over use or bruise occurred that it is fair to assume one or another as a factor. The trauma may have been forgotten till recalled by special questioning. (Too much credence must not be attached to the history of a bump or tumble however.)

In any event we have to deal with whatever morbid conditions are presented. Minor deformities originating in childhood are also to be assumed as acting as points of departure. They may or may not have become obvious thru aggravation. If plainly evident they can be reckoned with, ameliorated if possible; if not they are to be accepted. Round shoulders, one shoulder drooping, asymmetries in pelvis, in legs,

etc., often co-exist causing no discomfort until "something happens" to produce hypersensitiveness of the structures correlated with, hence reacting upon, transferred stresses.

What is the causal agency? More likely a fibromyositis than any other. Plenty of secondary causes can co-exist such as those mentioned. There may be a nerve irritated in continuity, a sick nerve emerging at a sensitive point, a lateral process from the spinal cord, impinged upon, compressed, mechanically irritated or locally diseased.

A sacrosciatic, sacroiliac or lumbosacral affection is often a common point of departure, for strains, hence of backache and of transferred pains. Rarely the lateral processes of the vertebrae are jolted, possibly fractured, inducing compression of the bodies of the vertebrae and what the osteopaths call a "lesion," *i. e.*, compression of a lateral nerve process may result. X-ray studies are needed in all suspicious instances. Among such are cases of static backache.

The pains and aches of senescence are due to different origins and conditions from those of so-called "rheumatism" or "gout," which sufferers delight to apply to their distresses.

They arise in definite, regularly advancing, cellular changes characteristic of body decline, senile cytomorphosis. Among these changes, and probably accounting for the sensory disturbances, are gradual replacements of muscle cells by connective tissue cells. In the process, which is a gradual and progressive one, new conditions of biophysics are brought to bear on the contained sensory nerve terminals, a sort of compression, or pinching. This interferes with, and impairs the contractibility and relaxability of the muscle spindles,

hence pliancy, elasticity and mobility subside.

The muscle fibers in the process of shrinking exert compression on nerve endings and some nerves in continuity are also encroached upon. These effects of discomfort, often amounting to pain (but not the agony of fibromyositis) are especially noticeable on movements, active or passive, as on starting up to walk, or to do something after lying or sitting quietly during which the affected structures become adjusted, moulded like jelly. Changes in the weather, of temperature and moisture concentration act similarly, but not alike, that of its analogue, fibromyositis.

The difference between the senescent ache and fibromyositis deserves to be clearly kept in mind, chiefly because the prognosis is so different. Still, both forms are relievable, and both forms demand action *not rest*. Stagnation, inaction is the instrumental cause, along with cold, chill of surface. Now the crux of oxygenation is the trypsin and trypsin to act must be warmed up. External warmth is grateful and helpful but *active self heating by exertion is curative*.

Traumata may be the starting point of hypertrophic arthritis of the spine and is peculiarly liable to be so when occurring in middle age or later and represents usually effects of wear and tear of occupation, postural errors, over use, neglect of getting the collateral structures into normal alignment—balance.

Here we reach another group of causal agencies for backache and obscure pains, *viz.*; *diseased states*. Previous infection may have altered the structures of joints, of the muscle sheaths, or tendinous insertions. The X-ray and other modern diagnostic wizardry are needed for solution.

MUSIC AND MUSICAL TRAINING IN THE LIFE AND MAKING OF A DOCTOR.

BY

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Music in its various forms of expression is recognized as one of the best pleasures in life. In every existence from the laboring man, who in his hours of recreation and leisure finds enjoyment in a simple popular tune or in a lively ragtime, thru all professions, up to the man who stands high in social distinction, the beauty revealed by the elegant performance of a symphony, music as the expression of human feeling and aspiration, is the fairy goddess adding to the enjoyment of life. Should the ever busy medical practitioner in his fight against human suffering be excluded from the enjoyment of such an ennobling art?

In the history of medicine at all ages we find eminent clinicians, surgeons and physicians who experienced the attraction and the refining influence of music. Such a hobby did not stand in the way of a successful career, on the contrary the understanding of this art was a great stimulant to beneficial work. Many instances could be mentioned where the enjoyment of this art as an efficient means of relaxation and as a needed outlet restored relaxing energy for the fulfillment of the various duties of the medical profession. The educational value of music upon human minds cannot be overestimated. Usually we expect the doctor not to be only a well trained expert in questions pertaining to physical welfare, but the public expects him to be a man of

education and refinement, who, by his personal charm has learned to attract and guide his patients thru sickness to better health. It cannot be denied that music practiced and understood by the medical man represents a great asset to himself and to some of the patients he has to deal with. He may be a giver or an appreciative receiver of music; by giving and receiving we experience the benefits of that great recreation. The stimulation attending the personal practice of an instrument must be experienced personally. The creation of a physician's orchestra in different cities of the United States is a proof of the cultivated gifts of the medical profession besides the up-to-date knowledge of questions pertaining to the medical profession. The spirit of harmony evidenced in their musical performances does not fail to assert itself in the professional and more cordial relations.

But even if personal musical gifts are not sufficient to practice the art itself, the lover of music gradually experiences the benefit of understanding the delicate meaning of musical expression. It seems as if human beings just by their love and understanding of music are lifted above the daily life, as if from a more elevated plane, they command a better understanding of life's tendencies and aspirations. One might be tempted to call it a kind of religion, which cannot fail to make humanity better. One of my former teachers in medicine in speaking of the qualities required for a physician told us that only a good man could become a good physician. The claim is frequently made that a man's life is richer if he has an inclination towards the arts. That may be true, altho it would be wrong to blame the colleague for the lack of opportunity for such an artistic education, that

much must be said, the man is to be pitied who is inaccessible to the beauty of music or to the revelations of art in general. The lack of it deprives human beings of one of the greatest and most ennobling influences of life.

Even in leaving the discussion of the value of musical training for the personal refinement of the physician, the question arises, can music be of any importance for the medical student? Any professional colleague in analyzing the means of physical diagnosis must arrive at a positive answer of the question. The objective signs of disease are closely related to physical, acoustic phenomena. Sound phenomena, the conductivity, quality, tonality, pitch, intensity, duration, and rhythm of the same are of great importance for the deductions resulting from such findings. These characters are important for percussion and auscultation alike.

The conductivity of sound for instance in a normal lung, or in case of infiltration of the same, or in the presence of fluid between the lung and the chest wall will be entirely different in each instance and pathognomonic. The quality and tonality of sounds as produced within the lungs, within the heart, or transmitted thru the abdominal viscera, or from elsewhere, are essential for the diagnostician. The better the musical training, the acuter the personal perception of the student, the more he will excel his competitors. The pitch elicited over an area of infiltrated lung, the one produced over a cavity of varying size as in tuberculosis, must become a familiar sign to the student. If such differences escape the attention of the examiner, this means error in diagnosis and possibly blunders in treatment. The high pitched murmur in a mitral insufficiency without any

complicating cardiac dilatation is entirely different from the lower pitched, soft murmur in cases of cardiac dilatation or those associated with insufficient myocardial tonus revealing a failing heart. The intensity of auscultatory sounds have their definite meaning. As in pleural effusion, empyema, or thickened pleura, the distant or even absent breath sounds will, when found, at once direct the physician's suspicion to the mentioned possibilities. Intense tubular breathing cannot fail to suggest consolidation, as in pneumonia or cavernous destruction of the lung parenchyma must suggest the probability of tuberculosis, etc. The pounding vigorous aortic and mitral sounds associated with kidney or aortic disease will have quite a different meaning from the weak or imperceptible heart sounds that are diminished in intensity on account of fluid in the pericardium. The duration of an acoustic sound can not be overlooked either. In pulmonary disease the deviation from the normal length, comparing the inspiration with the expiration, must always be the standard measure, as any change in the relation of these two phases will arouse the suspicion of something abnormal to be watched more closely. The interrupted or cogwheel inspiration, or of the expiration must be significant for the lack of elasticity of the air vesicles or of partial obstruction of these air passages by inflammatory products, whether in emphysema or in the latter instance in early pulmonary tuberculosis. The duration of the different heart sounds, whether observed directly over the ordinary sites of auscultation, their crescendo or decrescendo character, changing according to the distance from their point of origin, will be well considered. The overlapping of the heart sounds or of the murmurs, without any

pause between, is equally valuable in diagnosis of the case, but also for the prognosis, which changes according to the occurrence of hypertrophy or dilatation of the heart muscle being present.

As regards the rhythm of the auscultatory and percutory and palpatory phenomena, it is of interest to note that the student has less difficulty in estimating the same. Rhythm expressed by movement or by speech, constantly occurs in daily life. Even among primitive people we find it expressed in the dances and in the different ceremonies. We all are impressed by the graceful movements of the Greek dancers, depicted on the Etrurian vases, and we cannot but admire the graceful renaissance of dancing according to Greek conceptions, as an art, that is able to express the emotional variations of human feelings and thought. Just as rhythm is essential for a harmonious performance of movement or music, any deviation from it will be harmful, so in physical diagnosis the training in rhythm, in the orderly sequence of the heart sounds, or of the pulmonary phases of respiration, the regular succession of the apex—the pulse beats—must become well known to the student and to the practitioner, unless the diagnosis will lack completeness and clear understanding for the ways employed to correct these abnormal signs. The skillful player of a piano, or a stringed instrument will remember how much the sound is dependent upon the strength, the quality of the touch. The physician will not miss the opportunity to have his palpatory faculties trained to such perfection as the ear, which needs exercise. Just in proportion to the skill and training of differentiating these physical signs and well informed about the pathological changes which are the basis of these phe-

nomena, the physician and student will reach a perfection which will place him high above the routine average and those students of former decades who did not enjoy the same chances for instruction afforded in the hospitals and medical schools of to-day. Unable to attain enough training in physical diagnosis, we have reason to feel dissatisfied with the information gained by a superficial examination and the therapeutic results. The opinion of the public as to our skill will sooner or later show that part of the blame of failure is due to our incompetence, part to the whimsical attitude of the patient and part due to the extraordinarily difficult constellation of the obscure site of the lesions or to the lack of symptoms arousing our suspicion.

The value of a proper technic in physical diagnosis being emphasized and the musical training as one of the great necessities for the student being outlined, the question arises can all the students reach that goal? Frequently we hear parents say that musical instruction had to be discontinued on account of lack of interest, of perseverance on the part of the pupil. The student frequently is still under influence of former opinions that he is absolutely ungifted for any music and that every effort along such a line will be in vain. In our education positive and negative suggestions still exert their unconscious power, the understanding of the reasons, the gain we will make by doing such things, will stimulate the wish to possess, and from the proper understanding, from the intensity of that wish will depend our effort and our success. Certain impressions must be renewed several times until they leave a mark on an unreceptive ground, and figuratively speaking on the mind of the child tending towards adolescence. Now if our education is the result

of former training and understanding, like in a young plant all promising qualities are hidden in embryo, waiting for the proper conditions and favorable circumstances to make them evident to the world. In the child we have wonderful and promising opportunities to look for the hidden gifts, to develop the same to individual and creative factors. In speaking of the students, we frequently see that they are unable to grasp the elements of physical diagnosis, not that their hearing is affected, but because they lack the fundamentals of music. What time and effort has frequently to be wasted on students who live in a dream world in which the proper use of their five senses has become dwarfed, atrophied, too late for successful training. What has been neglected in school, in the daily life, by ignorance, lack of facilities cannot be given in a medical course. The early cooperation of the teachers in public, in high school is earnestly requested for the prospective medical student. We fortunately live in a period where, in this city particularly, the music is cultivated and made accessible to even the very modest means of the working man. The love for music being created, the wish for the ability to practice an instrument must be born and reared. For the students in medicine a short course in the elements of music would mean a decided advantage just for the proper understanding of the sounds listened to in physical diagnosis. Even, if a certain percentage of medical students appears absolutely unreceptive to musical training, the percentage being small, should not discourage us to do everything in our power to mature all the gifts, particularly the artistical ones, of the child into these attainments which create the beauty of character, and which besides the acquisition

of professional efficiency mean an addition to personal happiness and that of the fellow human being. In all our aims let us not forget the words of the scripture "mankind does not exist only from the daily bread but from spiritual influences, which give new life and beauty to the organic substratum called living matter." From a higher level let us view the purpose of medical efficiency reflected in the work of the efficient and idealistic disciple of Æsculapius.

ACUTE APPENDICITIS AS A COMPLICATION OF DIPHTHERIA.

BY

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I am indebted to Dr. P. F. Barbour (with whom I had the honor of being associated) for the medical history of the case which furnishes the basis of this paper. A diagnosis of appendicitis had already been made by Dr. Barbour, whose report is as follows:

"On November 17th, 1915, I was called to see L. H., a girl, aged six years, who was suffering from an attack of appendicitis; she had a temperature of 100.5° F., and a pulse of 132. I had seen her in a similar attack during the month of July, 1915, which had yielded readily to the 'starvation' treatment, and there was a history of several mild attacks before and after that time. During the present attack the pain was considerably more severe, and operation was urged. The family demurred, and the next day the child seemed very much better.

"On the morning of the 19th she became 'croupy,' and on examination some membrane was observed on the tonsil (diphtheria). Five thousand units diphtheria antitoxin were then administered. That night her breathing became more difficult, and five thousand more units were administered. The dyspnea was severe, and I remained with her all night ready to intu-

bate if necessary. However, respiration finally became slightly easier, and intubation was not performed. The following morning three thousand more units antitoxin were administered.

"On November 21st she complained of increased abdominal tenderness, and the following day (22nd) a general peritonitis was evident; but as the symptoms were not very severe, it was considered wise to postpone operative intervention in view of the great danger of general anesthesia in a child so recently recovering from diphtheria. However, the next day (23rd) the symptoms became more aggravated, and Dr. S. C. McCoy was called in consultation. It was decided best to operate, regardless of the risk of heart failure. The operation was performed at 11:30 P. M. by Dr. McCoy, the anesthetist being Dr. D. Y. Keith."

The following is a succinct report of the case from the time the patient came to operation: A female child, six years of age, greatly emaciated, pulse 130, respirations 50, temperature 101° F., with a history of frequent vomiting for several hours; evidences of post-laryngeal paralysis present. Strenuous efforts to produce alvine evacuations by enemata had been of no avail (septic paresis); the patient was very nervous and restless; characteristic symptoms of diffuse peritonitis.

Physical examination: The abdomen, prior to anesthesia, was greatly distended, painful, rigid and dull over lower portion; the epigastrium was tympanitic. Palpation under light anesthesia revealed a tumor mass in the right lower quadrant.

Technic of operation: The abdomen was given the usual iodine preparation, and under light gas-oxygen anesthesia a two-inch incision was made along the middle third of the outer border of the right rectus muscle. The fascia was then divided, the rectus muscle retracted toward the median line, and the peritoneum opened. The wound at once filled with a thin, sero-purulent fluid. This material was removed from the wound by sponging, and two fingers were introduced into the abdominal cavity, which contained an abundant amount of fluid in which coils of intestine were floating free. A mass was found in the right iliac fossa. The median side of the wound was then isolated by packing with moist gauze; the abscess cavity was next

opened and about ten ounces of thick, foul-smelling purulent material escaped from the wound. The desperate condition of the patient would not in my opinion justify further search for the appendix. No attempt was made to cleanse either the abdominal or the abscess cavity by sponging. A rubber tube drain was introduced into the right iliac fossa posterior to the intestines; a cigarette drain was carried to the bottom of the abscess cavity, and another was placed in the right renal fossa. These drains were brought thru the lower angle of the wound and secured by safety pins. The external wound was closed in one layer with three interrupted silkworm gut sutures, and a large wet gauze dressing applied. The operation lasted fourteen minutes.

Cultures from the discharge the first day after the operation showed streptococci, staphylococci and colon bacilli; staining for the Klebs-Loeffler bacillus not made. Blood examination on the fifth day after the operation showed:

Hemoglobin	78%
Erythrocytes	4,800,000
Leucocytes	9,800

Differential:

Polynuclears	36%
Lymphocytes	46%
Mononuclears and transitionals	12%
Eosinophiles	5%
Basophiles	1%

Post-operative treatment: The patient was placed in bed in the Fowler position, and continuous saline proctoclysis instituted according to the Murphy method. The moist dressings were changed every three hours, and postural drainage was also practiced, *i. e.*, the patient was turned on the right side at intervals alternating with the Fowler position. The drainage tubes were removed on the fourth day after the operation. A discharging sinus persisted for several days following their removal. After the tubes were removed the dressings were changed to dry sterile gauze held in place by adhesive strips. The silkworm gut sutures were removed on the seventh day. The wound healed by second intention.

Post-operative symptoms: A review of the charts shows that the patient's temperature was normal at 2:15 A. M., *i. e.*, three and a half hours after the operation; pulse

130, respirations 60. The temperature, which was recorded every two hours during the first twenty-four hours, ranged from 98.6° to 99.2° F., the pulse rate varied from 120 to 130, and respirations subsided from 60 to 28 per minute. On the evening of the second day the temperature reached 100.8° F., the pulse remained 130, respirations 28. On the third day the temperature was again normal, and ranged from 98° to 99.5° F., until the twelfth day. During this time the pulse rate varied from 112 to 120, and the respirations were normal. The next four days the morning temperature was subnormal (97° F.), with evening elevation to 100° F.; during these four days the pulse ranged from 110 to 120. The following seven days the temperature was normal, the pulse remaining 100 to 110 (after this no record). No nausea or vomiting recorded after the operation. The patient was given one-half ounce of water three hours after the operation, which was retained. This amount was repeated every two hours until the end of six hours, when water was allowed *ad libitum*. Twelve hours after the operation there occurred a brownish-colored liquid defecation, and a note appears on the record that flatus was expelled. Normal alvine evacuations once or twice daily thereafter.

Nourishment: After the first twenty-four hours, at the suggestion of Dr. Barbour, panopepton in ounce doses was given every four hours. Light liquid diet was started on the fourth day, and increased to light semi-solid foods as the child improved.

Later report: On February 8th, 1916, the patient had regained her normal weight, and aside from a ventral hernia her health seemed perfect. At this time she was subjected to operation for removal of the appendix and repair of the ventral hernia. The technic of this operation was as follows: Two elliptical skin incisions three inches long were made with the view of removing the "thinned-out" cicatricial tissue resulting from the previous operation; this cicatrix was eliminated by careful dissection; it was found that the fascia and muscle had retracted leaving the peritoneum closely adherent to the scar. The peritoneum was next opened and the edges of the wound retracted; exploration revealed several adhesions of intestinal coils to the cecum. The appendix was located in a

mass of adhesions, which were separated and the appendix removed. The distal end of the appendix was swollen and distended, section showing the walls thickened and infiltrated with leucocytes; the portion intervening between this and the cecum appeared normal; the lumen contained no pus.

The herniotomy was completed according to the method described by Mayo, of overlapping the fascia and bringing the skin edges together. The wound healed primarily, the patient's convalescence was prompt, her recovery satisfactory, and she is now in perfect health.

My principal reason for reporting the foregoing case is the lack of information concerning the association of appendicitis and diphtheria appearing in medical literature. It will be observed, however, that I have made no claim tending to definitely associate the etiology of the two diseases. So far as I have been able to discover no reference is made in standard text books on either pediatrics or surgery of the coincidence of these two diseases, and the subject has received scant mention in current medical literature. I am informed that the records of the Kentucky State Board of Health, and likewise those of the United States Public Health Office, contain no reports of the coincidental occurrence of the two diseases, which seems rather remarkable when we recall that the most vulnerable age for appendicitis is childhood or early adolescence, and that diphtheria belongs strictly among the diseases of children. A careful search of available ancient and modern literature reveals but one paper on the subject, *viz.*, by Reiche (1914) in which he reports nineteen cases of appendicitis consecutive to diphtheria observed in hospital practice. The views of this distinguished author are regarded of such unusual interest that at the risk of unduly prolonging this dissertation a rather complete resumé of his paper, with case reports, etc., is presented herein. It is the writer's wish that full credit be extended to Dr. Reiche for his material, with thanks for the privilege exercised in abstracting and epitomizing the data. His original paper appeared in the *Mitteilungen aus den Grenzgebieten der Med. und Chir.*, Jena, vol. xxvii, No. 2, 1914.

The author claims that circumscribed pain and sensitiveness to pressure in the

ileocecal region, are not exceptionally infrequent in patients suffering from diphtheria or convalescing therefrom. On the other hand, he observed during a "diphtheria epidemic" well defined signs of appendicitis, with heightened symptoms and decided rise in temperature (38.4° to 40.4°

C.) preceded or accompanied by vomiting, in nineteen cases.

The accompanying table shows the most important features in connection with the nineteen cases reported. One (No. 12) is reviewed in detail with the post-mortem findings.

Consecutive Number.	Date of Admission.	Name, Age, Sex.	Severity of Disease.	Leucocyte Count.	Complications.	Day of onset of Appendicitis.	Duration of subjective signs of Appendicitis.	REMARKS.
1	9-11-'09	M. 4 yrs. Male.	III	3,000	Nose, larynx, tracheotomy. Well on 72nd day.	81 days, 9th day relapse	4 days	
2	10-8-'09	F. 5 yrs. Male.	III	3,000		22	7	Palpable tumor for many days. Albuminuria.
3	12-27-'09	R. 15 yrs. Female.	III	3,000		7	5	
4	2-9-'10	F. 1 yr. Female.	III	1,500		15	6	
5	7-5-'10	H. 15 yrs. Female.	I	1,000		36	7	Albuminuria up to $\frac{1}{2}\%$.
6	9-30-'10	B. 19 yrs. Female.	I		21	7	
7	10-16-'10	E. 26 yrs. Male.	I	3,000		9	43	Appendicostomy in the eighth week.
8	11-4-'10	K. 6 yrs. Female.	III	4,500	Nose, larynx, nephritis.	30	5	Taken from hospital against advice of physicians on Nov. 30th. Died on 45th day.
9	1-9-'11	K. 9 yrs. Female.	III	6,000	Heart failure.	14	55	Large abscess which disappeared slowly, with a leucocytosis for weeks. Heavy nephritis (up to 12% albumin). Temperature as high as 40.4° C. Blood sterile.
10	1-20-'11	Z. 14 yrs. Male.	I	4,000		12	4	
11	3-15-'11	H. 22 yrs. Female.	I	1,500		12	..	Operation on 2nd day, acute swelling of the mucosa of the appendix, with hemorrhages. Healing without inflammation. Albuminuria during the attack.
12	See detailed report.							
13	8-28-'11	M. 10 yrs. Male.	III	10,500	Delirium, otitis, later very severe palsy.	17	7	Albuminuria.

Consecutive Number.	Date of Admission.	Name, Age, Sex.	Severity of Disease.	Leucocyte Count.	Complications.	Day of onset of Appendicitis.	Duration of subjective signs of Appendicitis.	REMARKS.
14	9-5-'11	W. 20 yrs. Female.	ii	1,500		11	7	
15	9-12-'11	T. 36 yrs. Male.	ii	3,000		3	16	Until dismissal on 50th day, a resistance in the ileocecal region remained.
16	5-8-'12	H. 8 yrs. Male.	ii	3,000		4	..	Operation after 48 hours. Appendix was already perforated. Six days later post-operative ileus. Numerous punctations of the twists of the intestine, which was greatly distended.
17	10-5-'12	T. 14 yrs. Male.	iii	6,000	Nose, otitis, debility of the heart.	3	..	Seized on 5th day in hospital with symptoms of diffuse peritonitis. Death on 9th day. Purulent peritonitis, gangrenous appendix, streptococci in blood.
18	10-7-'12	U. 4 yrs. Male.	iii	4,500	Nose, larynx, tracheotomy, nephritis, debility of the heart.	15	..	Death on 16th day in hospital. In appendix great swelling and opacity of the mucosa, with hemorrhages. Streptococci in blood.
19	4-22-'13	S. 19 yrs. Female.	iii	6,000	Nephritis.	14	8	Albuminuria up to ½%.

Case No. 12.—A male of eighteen years, admitted March 25th, 1911. Severity of the disease iii; leucocyte count 3,000; onset of appendicitis tenth day. The patient was strong and had always enjoyed good health previous to present attack; intestinal functions regular. April 1st (tenth day of illness) throat practically free from membrane; no other signs of disease detected. April 3rd, diffused pain with moderately distended abdomen, principally in vesical region; spleen slightly enlarged; throat clear. April 4th, renewed elevation of temperature, pains in head and body; no sensitiveness to pressure even in ileocecal region. April 5th, skin slightly icterous. April 6th, spleen greatly swollen; leucocytes 59,200; specimen of blood taken. April 7th, few colonies colon bacilli on agar plates; great prostration; increased jaundice; diarrhea; on Drigalski plates only colonies colon bacilli appeared. Urine: heavy bile reaction; albumen and blood; sediment,

many hyaline, granular and epithelial casts, white and red blood cells, epithelium. April 8th, some headache. April 10th, jaundice diminished in intensity; albumen content in urine slight (½%); sediment unchanged in content; bile, urobilin and urobilinogen present; Drigalski plates and bouillon tubes remained sterile. April 15th, a severe chill; blood taken on the 13th and this date placed on several agar and dextrose-agar plates and in bouillon remained sterile. Lungs and heart sounds clear; pulse weak, rapid, regular; slight jaundice still present; no pain on pressure in liver region; liver itself slightly enlarged; spleen greatly swollen; abdomen continually somewhat distended; no pain in deeper parts on pressure. April 17th, sudden prostration; two severe chills half hour each; jaundice slight. Urine: bile, urobilin, urobilinogen and traces of albumen continue; sediment, many cells and casts. The leucocytes from April 8th to date were as follows: 9,900, 9,200, 13,600,

11,700, 12,400, 19,400, 9,500, 14,400, 14,600, 17,400. Smears from the throat still showed diphtheria bacilli; stools at first diarrheal, later more solid, two or three a day, not abnormal in color. April 18th, sudden collapse and death night previous.

Post-mortem findings: a serofibrinous peritonitis, with 400 c. c. fluid in cecal region; adhesions discolored brown, intestinal and parietal peritoneum; on separation thin feces mixed with pus liberated; of the appendix only $2\frac{1}{2}$ cm. necrotic stump remained suspended in abscess; contained two hairs 3 cm. long; superior mesenteric and portal veins blocked with pus, walls thickened, dark, gangrenous; parts about mesenteric vein discolored and saturated with pus; even the small branches coming from region of cecum showed purulent inflammation in cross section. Spleen 15 x 9 x 5 cm. Kidneys soft, surface covered with reddish brown spots; cortex and medullary substance not distinctly separated. Liver 29 x 24 x 9 cm. of doughy consistency; surface showed groups of abscesses size of hemp-seeds; on lower margin right lobe irregularly defined abscesses, some large as walnuts; all over cut surface yellowish green pus; parenchyma light reddish-brown with discolored lobulation. The agar plates to which blood from the heart was applied showed many colonies of bacillus coli communis.

The foregoing nineteen cases of appendicitis occurred in a total of 7,015 patients with true diphtheria, as shown by the presence of the Klebs-Loeffler bacillus, the complication thus appearing in only 0.27%. In 1,848 patients between one and five years, 3 cases; in 2,924 between five and fifteen, 9 cases; in 1,488 between fifteen and twenty-five, 5 cases; in 607 between twenty-five and fifty, 2 cases. In eleven cases serious diphtheria preceded; in three the disease was moderately severe; in five it was light; these three groups of different severity occurred in totals of 2,588, 1,818, and 2,609 cases. In four appendicitis developed during the height of the attack of diphtheria; in five during the first week; in

seven during the second week; in the remaining three on the twenty-second, the thirtieth and the thirty-sixth days of the illness; in one (No. 1) it did not occur until the relapse. A light or moderately severe picture was shown in fourteen; in one (No. 11) operated upon early, and in another (No. 18) dying from severity of the diphtheritic infection, the appendicial involvement was shown anatomically to be slight. Nephritic irritation was present in five cases, and the preceding diphtheria was held responsible for the vulnerability of the kidney parenchyma, at the subsidence of which toxic albuminuria always appeared and then disappeared.

In five instances the appendicitis was exceedingly severe (Nos. 8, 9, 12, 16, 17), and three of these patients died. One (No. 8) was removed from the hospital against advice when urgency of operative intervention was proposed; another (No. 17) when admitted showed such severe symptoms of diffuse peritonitis, together with an increasing throat involvement, that surgical intervention was contra-indicated; the third (No. 12) succumbed to pyelophlebitis. Of those recovering one (No. 16) was operated upon during the acute attack, the patient surviving the complication of paralytic ileus; another (No. 9), because of serious cardiac complications following the diphtheria, had to be treated expectantly, which led to recovery after many anxious days. In one (No. 18), incipient appendicitis disclosed in post-mortem was not the cause of death; the complication was only surmised, because the pain might also have been due to acute swelling of the liver resulting from cardiac debility. In one (No. 12) appendicitis was not diagnosed, because confused by general abdominal pain at the outset and later completely obscured by signs of severe

sepsis; to gangrene of the appendix was added in rapid sequence phlebitis of a mesenteric vein; the early jaundice indicated liver complications. "In the production of the severe kidney signs which were evident at the beginning, the toxin of the diphtheria no doubt aided considerably; at any rate I saw, in eighteen cases of pylephlebitis suppurative, which came under my observation and on which I published a paper several years ago, a hemorrhagic hepatitis in only one patient; and he died in four and a half weeks of a pneumococcic inflammation of the portal vein caused by the penetration of a seed of grain into the vein." (Reiche). Appendicitis appeared as the most important etiological factor in half these eighteen cases. In five the primary perityphlitic infection had evidently given impetus to the complication by transplanting the infection to the portal vein; in four the beginning of the illness and symptoms when admitted did not indicate appendicitis. The leucocyte count varied from 9,600 to 18,600 in one of the cases; colon bacillus infection also present; fatal result in two and a half weeks. Another patient died in eight weeks; leucocyte count, after an initial rise to 59,200, varied between 9,200 and 19,400. "If we regard the pylephlebitis as only the occasional accidental sequel of a purulent appendicitis which is independent of the diphtheria, then we come to the question of a connection with the preceding throat infection for the herein published series of nineteen cases of appendicitis, all of which developed before our eyes in the course of the same disease, at its climax, and for the most part during its decline." (Reiche).

Reiche suggests that involvement of the appendix is not governed by the specific diphtheritic angina, but in general by the

throat infection,—“by the acute temperature-rising infection,—by the mixed infection accompanying it,”—altho cultures from the appendix in case No. 18 showed only colon bacilli, and diphtheria bacilli colonies could not be isolated from the abscess pus in case No. 17. In the etiology of appendicitis a prodromal angina has repeatedly attracted the attention of various observers; this fact was emphasized by Kelynack over twenty years ago. Based upon positive animal experimentations Poynter and Payne were able to support their conclusion that one cause of appendicitis was streptococcic invasion from follicular tonsillitis thru the blood stream; and Kretz cited numerous post-mortem observations in which the triad, (a) angina, (b) inflammatory lymph glands in the neck, and (c) phlegmonous appendicitis, permitting only the interpretation that the cecal disease was a localization of the general infection thru the blood, and that the tonsillitis was the source of the bacteremia.

In Reiche's collection, omitting patient (No. 8) removed from the hospital against his advice, Nos. 12, 16, 17, and possibly 9, may be included in the category of phlegmonous appendicitis. In the others, based upon the clinical picture together with the evidence derived from operation and autopsy, less malignant pathological changes are to be presumed. In addition he states that his many bacteriological investigations on the blood of living diphtheritics suggest a subordinate role to bacterial invasion of the blood stream and with it the probability of bacteremic metastases, even in the group of cases with the most pronounced complications.

“In my judgment, therefore, the local alterations in the appendix, and especially the swellings of the intestinal mucosa

and its follicular appendages, frequently disclosed by autopsy on those dying from diphtheria, either of slight or severe degree, must be given precedence in the majority of the cases of appendicitis seen by us in explaining their etiology. It is a matter of local disease much oftener than of a localized general or metastatic disease, as the occurrence of these local alterations in our experience even in light cases would confirm. These local changes command our interest, not only as uncommon sequels of diphtheria and as the cause of many a case of perityphlitis, but they are primarily of great practical significance at the bedside itself; in reference to differential diagnosis, since also the acute swelling of the liver in an approaching collapse of the heart can lead to intense pain in the right side of the abdomen with great sensitiveness to pressure; and in reference to therapeutics, when an existing weakness of the myocardium forbids an immediate operation or at least shrouds the decision to do one with especially serious reflection." (Reiche).

ORIGIN OF MENTAL AND PHYSICAL POWER.

BY

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In *AMERICAN MEDICINE* for February, 1917, I made the following statement:

"At no time during the nineteenth century did any improvement in trotting power come from sires which were below the standard for sires, either by lack of age or by lack of that physical work required to bring about standard development.——— The real improvement came thru those horses which were worked on the track or on the road for years before being bred. Two generations of idle brood mares running free in the open lot was sufficient idleness to be absolutely fatal to the production of 2:10 descendants, no matter to what they might be mated."

That statement was quoted approvingly in the editorial columns of *The Horse*

World for April 17, 1917. The editor of that journal is an expert in horse pedigrees and familiar with the history of the American trotter from the earliest days. He is also familiar with the details of the articles by which I demonstrated the facts of the statement.

Yet there are persons who will deny these facts without examination or investigation of any kind. The evidence that their denials are not based on an investigation is shown by the fact that their comments exhibit a total lack of intelligent comprehension. There are other persons, professed scientists, who try in various ways to conceal or suppress the facts. One of their ways of doing this is to try to make it appear that the facts are imaginary, and to do this they refer to them as "ideas." Still others try to make it appear that the facts are faked or selected in such a way as to lose all value from a scientific standpoint. And yet others use their influence to discourage a consideration of the facts by attacks upon the personality of the person who dug them up.

We need not stop here to consider the motives back of all of this opposition. That will probably be ventilated by others in the years to come. Neither need we stop to argue the matter because the facts are of a kind which anyone can determine for himself. All that is necessary is a little careful comparison of data to be found in any fairly well equipped library. What we have to do is to make note of the nature of this opposition, and then turn our attention to a consideration of the facts and their relationship to human welfare.

When a horse is trained he gains in trotting power as the training continues. The amount of gain (acquirement) is determined by the amount of trotting work

performed and not by growth in size. A horse is full grown at about three years of age, but the development of trotting power as a result of trotting work continues long after that. The champion Goldsmith Maid was trained continually year after year and did not reach her highest speed until seventeen years of age. Obviously, when a horse is regularly and continuously trained, the age of the animal is a measure of its acquirement.

When we take this fact and trace the evolution of trotting power during the nineteenth century we find that the improvement came thru using old animals as sires and dams. But there are certain kinds of exceptions. Improvement sometimes comes thru sires and dams of less than the average age for all sires and dams, but it does not come thru unusually young animals. It comes thru old sires and dams but not thru all old ones.

The kind of comparatively young sires and dams found in the lines of descent which lead toward improvement are those animals which were developed by intensive and systematic training, and were bred when this development was at its highest stage. It never came from unworked animals which were selected for breeding purposes because of conformation or for any other reason. The kind of old sires and dams leading to improvement were those which had been worked hard at the trot continuously for many years, and not those which had been kept regularly for breeding purposes.

These facts mean nothing to the man who does not want to know, or to the man who gets his ideas of muscular development by consulting the hair on a guinea pig or contemplating the eyes of fishes and flies. Neither do they mean anything to those

superficial scientists who criticize without having learned enough about the matter to even state what it is.

But these facts do mean a good deal to the man who will look at them critically and carefully. They mean that muscular strength is developed by continued physical exercise, and that the offspring inherit the development thus acquired. They also mean that muscular strength declines by continued idleness, and that offspring inherit the weakened muscular development existing in idle or sedentary parents. In other words, the offspring inherit the muscular development existing in the parent at the time the offspring was conceived, and not the muscular development which existed some years previously or will exist some years later.

What is true of physical power is also true of mental power. A man gains in mental power by mental exercise, commonly called study, or getting an education. This development of mental power continues up to some advanced but unknown age. The Binet system recognizes this up to some point between fifteen and twenty years of age, but beyond that there is a development of mental power recognized in the ordinary affairs of life. One mark of this may be seen in the absence of inventions made by persons less than twenty, and the rarity with which anything of importance is produced by persons less than thirty. Those inventions which require the greatest brain power to produce are usually made by men beyond forty years of age.

The child inherits the mental development existing in the parent at the time the child was conceived. The persons who state the contrary never investigated the matter either directly or indirectly. No one of them ever

measured up the amount of mental development in terms of the work necessary to obtain it and then compared that measurement of the parent with what is found in the offspring. They have no scientific information on the subject and never made any attempt to get such information. If one is to judge by their statements, they are unable to understand the difference between things learned and the mental development which comes from the work of learning.

The fact that the child inherits the acquired mental development of the parent may be seen in the fact that we get our superior men and women from older parents and not from younger ones. In considering this point the reader should not get the idea that this matter can be determined scientifically by any thing so superficial as simply comparing brothers with each other, or carrying an investigation only as far as the parents. Many extrinsic circumstances affect appearances, and unless we can take all of these into consideration and weigh their value we are liable to be misled. The proper way is to extend the investigation to grandparents and great-grandparents and learn as accurately as possible how much mental development due to mental work existed in each of these persons at the time of reproducing. When that is done with reasonable care there is no difficulty in arriving at the facts.

There is a widespread belief that inherent mental and physical power comes from some fortuitous variation of structure. The belief that structure is the source of power is what impels the phrenologist to feel the bumps on a man's head, and the uninformed mechanic to try to make a perpetual motion machine. Structure is one thing, but the power necessary to operate it is a totally different thing. The power

of a man and the power of an engine are one and the same thing. Both are measured in foot-pounds, and both do the same work. To understand the evolution of human intelligence it is necessary to distinguish between power and structure, and to direct investigations to power as distinguished from structure.

The structure of animals varies from generation to generation by modifications of the arrangement of parts already in existence. The power of animals also varies from generation to generation by a redistribution of the power already in existence. But no such redistribution of existing power will increase its quantity. The man of great mental ability, and any animal of unusual physical strength, has power in increased amount, and no fortuitous variation will bring about such increase.

Physical strength is built up little by little by long continued physical exercise, and that is the only way that physical strength is built up. Physical strength is lost little by little by long continued physical idleness, and, barring illness, that is the only way that physical strength is lost. Similarly, mental strength is built up by mental exercise, and is lost by mental idleness.

What is true of the individual is true of race, but to get the information for the race it is necessary to take more than a minute fraction. For milk-producing power in cows I investigated the details for each dam in three generations of progenitors in each pedigree for 144 of the largest milk-producers in the country. For the American trotter and for the English setter I investigated the details for both sires and dams for five generations of progenitors in the pedigrees of some two hundred of the most remarkable animals ever produced. For human beings the investigation covers

eminent men, feeble-minded men, families, tribes and races. The details of these investigations are set forth in more than eighty contributions in various journals, and are condensed in *Dynamic Evolution* published by Putnam & Co.

A CASE OF EPILEPSY OF UNUSUAL INTEREST, WITH REMARKS ON GLANDULAR THERAPY.

BY

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The following case will doubtless prove of interest to those who have met with similar cases, and may help to throw some light on obscure nervous conditions in girls at or near the age of puberty.

We have seen brilliant reports on the use of ovarian substance in the treatment of certain cases of dysmenorrhea, and in some of the toxemias of pregnancy, but so far I have failed to see any reference to the use of this product in true epilepsy.

A treatise by Osborne and Fishbein has the following to say concerning epilepsy in relation to menstrual derangements:

"Epileptic attacks developing during some disturbance of menstruation, whether at the time of puberty or at the time of the menopause, and especially if repeated only at the times of the menstrual periods, just before or just after, or at a time when the menstrual period should occur and does not, shows that the cause has something to do with the thyroid. The thyroid gland hypersecretates normally at and before menstruation; if it does not do so, something in the system cannot work as perfectly physiologically. In the kind of epilepsy just described, thyroid is the treatment. * * * * * Many cases are on record in which this kind of epilepsy has been cured by this treatment."

History of case: E. H., age 18 yrs., 6 mos., white girl, weight 97 lbs. Normal, healthy baby, full term, breast fed. No previous illness of consequence, menstruation began at 16 and was regular and normal up to present illness.

Family history: No epilepsy or nerve disorders, no history of tuberculosis or specific trouble.

Physical examination: Small frame, fairly well nourished. Heart and lungs negative, abdomen negative. Breasts undeveloped, with narrow hips. Tongue heavily coated, breath foul. Skin moist, anemic, anxious expression.

Present illness: In January, 1914, patient had a moderately severe attack of "mumps" with an accompanying ovaritis. After continuing for about a week patient had a convulsion that appeared to be epileptic in character. There was a complete loss of consciousness with facial contortions and general muscular contractions. After regaining consciousness she complained of severe frontal headache and lassitude for several hours.

After this attack she seemed to be normal for about three weeks when she had another similar convulsion and continued to have them at more or less irregular intervals, averaging at this time possibly three a month. One peculiar feature was the time of seizure which was usually just before time for her to awake in the morning. They would be witnessed by the mother and the patient would only know of their occurrence by the resulting headache and depression. Not all were nocturnal, however, as she would often have a seizure during the day having a very slight warning of its approach.

The menstrual function became very irregular and scanty and finally ceased entirely. At first the convulsions seemed to bear some relation to the menstrual period coming within a week of the time either before or after. Constipation was very persistent with coated tongue and foul breath.

In the early part of 1916 the convulsions became more frequent reaching as high as four a week and seemed to resist all the usual treatment. Heretofore there had been some response from bromides and sedatives so far as to the control of convulsions but no treatment had influenced the amenorrhea. Her tolerance for bromides was very

limited and more than once developed severe bromism.

Treatment: For two years the treatment was along the usual lines for epilepsy, *viz.*: Bromides, hyoscyamus, chloral hydrate with free catharsis, restricted diet and good hygiene. Except for a slight temporary decrease in the frequency of the convulsions no good was accomplished. During 1915 she spent several months in New York state where she was under the care of a specialist in nervous disorders.

In January, 1916, she was put on thyroid ext. in increasing doses. At first we thought there was some benefit but after four weeks' trial it was given up.

At this stage it was advised that she consult a specialist in Richmond, who made a very thoro examination and requested, among other things, an X-ray picture of the sella turcica. This was taken and a diagnosis of "dyspituitarism" made. She was accordingly put on pituitary ext. (ant. lobe) together with heavy doses of bromides in combination with *Solanum carolinense*. For a week she went along nicely and then suddenly began having the convulsions more frequently than ever. On account of a severe bromism over both tibias the mixture had to be stopped. The pituitary tablets were kept up for sixty days with no result as to the frequency of convulsions. It was noticed, however, that the headache and depression following were not as pronounced, and her general condition seemed improved.

It was very apparent to the writer that this patient was suffering from a disturbed glandular function but so far the deficiency had not been supplied. Having tried out thyroid and pituitrin we decided the next logical thing would be ovarian ext. About Sept. 15 she was started on luteal extract gr. ii t. i. d., increasing one tablet a day until just before time for menstruation she was getting ten (10) tablets a day. All other medication was stopped. Much to the delight of all concerned the convulsions ceased as if by magic and the menstrual flow came on normally, both as to color and amount. The tablets were kept up during the flow and were then decreased to three a day.

Patient continued to do well, gained three pounds in weight, color improved, tongue cleared and bowels became more regular. On Nov. 15, or at the end of two months there had been no return of the convulsions

and the patient was in splendid physical condition.

Result. After four months' treatment. Patient in splendid condition, no return of convulsions, menstruation has come on each month normally. Sleeps well, bowels regular, tongue clean and breath good.

CONCLUSIONS.

The results in this case have been little short of marvelous, and demonstrate the importance of making use of that too rare faculty, common sense, in the treatment of all obscure conditions. In reviewing the history of this case, it seems strange that ovarian substance had not been the first thought, but as is so often the case, we must soar among the clouds of science before coming down to common facts.

This girl, evidently at the time of the attack of parotitis and ovaritis, suffered an injury to the glandular substance causing a deficiency of secretion which manifested itself in epileptic seizures, when nature increased the demand for that secretion at the menstrual period. This deficiency was supplied by giving corpus luteum, with the result of a transition from what appeared a hopeless condition to what is apparently perfect health. Of course at this early stage we cannot pronounce the girl cured for all time, but we do know that her condition for four months has been highly satisfactory. She will probably have to keep up the luteal extract for a long period, taking it just before and during menstruation, but this will be a very simple procedure, considering the results obtained.

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Flies.—French observers have found that house-flies only see white light, and that if a room has windows only of blue glass the flies act as if in darkness. Blue glass also keeps out the heat.—*Jour. Med. de Paris.*

THE SOCIAL INSURANCE CAULDRON.

BY

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According to the words of Dr. Alexander Lambert, Chairman of the Social Insurance Committee of the American Medical Association, "any scheme which will promote the health and increase the efficiency of the individual is of interest to the American Medical Association."

In the present era of medical revolution and betterment, many roads are travelled by persons of different thought, but with the same end in view,—the relief of human illness. Differences of opinion exist, even among medical men, as is natural, when mankind varies and social position divides humanity into classes. "Do not create class distinction," has been urged. It has existed for hundreds of years, but "strife" has not.

The opponents of health insurance are chiefly recruited from the members of the medical profession who are distinctly autocratic,—not believing in any method of procedure which will interfere with the present system of medical practice, on account of professional caste, success, desirable clientele, or interference with remuneration; those who agree on the principle but not on the method; and those of democratic inclination, but who fail to see where the adoption of health insurance would be of more benefit than the present inter-relationship between the medical profession and the laity.

Much pardonable opposition comes from members of the profession who view with dire forebodings what might happen to their incomes, and personal interest blinds them to the justness of the measure. They, as well as physicians in general, make use of the different forms of disability insur-

ance, as good business policy, yet fail to see where such a protective benefit should apply to the wage earner.

The method of practicing medicine today is the most agreeable and independent way in which it can be done, but it is not the most efficient, from the viewpoint of the unbiased physician and the wage earner, because it is too expensive. The pivot of the social insurance argument rests upon the inability of the wage earner to properly care for himself under present social conditions.

Our nation is no longer one of fields and forests; congested and thickly-settled areas abound where formerly there were rocks and rills. The ogre, "high cost of living" is with us, and the poor feel it far more than the rich. Industry has displaced agriculture to the extent that there is no great over-abundance of foodstuffs, and the great collective population has to pay the price. It is no wonder that when sickness invades the home, it is not prepared to meet the expense of proper treatment.

It is the purpose of the medical profession to relieve the tendency to acquire disease and to cure or alleviate it when it occurs. The science of medicine has so progressed that it has been developed into special branches, in order to treat more effectively diseases of the different organs, and the one vital, pertinent thing to remember is—that the cost of the cure of disease has also increased.

Preventive medicine has made prophylaxis more precise; modern medicine treats disease more effectively than before; but nothing has been done to lessen the financial burden of disease to the family. What will relieve the stress more than an adequate and equitable form of health insurance, in which the insured receives maximum benefits and

the physician just compensation and consideration?

Statistics show that the organic type of disease is on the increase, particularly mental disease. This is not due to the high cost of living, generally, but rather to the cost of high living, and the high cost of living operates chiefly to prevent proper medical attention. Health insurance would tend to take the situation in hand and influence the insured to have frequent physical examinations. Industrial diseases are on the wane, because of forced governmental supervision. We are one great national family, and it is incumbent upon the government to take care of its children, and the only feasible way in which it can be accomplished, other than making the medical profession a governmental institution, is by health insurance.

As the world has progressed the underling has risen; he at times asserts himself—demands his rights. The ancient bondage of the Egyptians, the medieval barbarity of the Romans, the modern serfdom of Russia, the isolation of the Asiatic female, and the present feudalism of Mexico are examples of what the plebeian has passed thru. Recently, the Czar of Russia has been picked up on the shovel of reform and dumped into a castle of obscurity,—from monarch to plebeian in one step.

Revolutions have changed forms of government; inventions have revolutionized industries,—is it not possible for progress to demand a revolution in the manner in which medicine is practiced, if it be for the best interests of the nation? We are all aware of the efficiency of the United States Public Health Service in handling epidemics, where local health functions fail. Such success comes from governmental supervision, system and compulsory regulation.

Caste exists among medical men, as among humans in general, tho we are held more or less within bounds thru professional propinquity, fraternal ideals and a code of ethics. Members of the profession possess either autocratic or democratic inclinations, but in order to consider what is best for the vast army of wage earners (90% of the population), it is necessary to consider social welfare from a common level. Czars and Kaisers are out of place in any democratic institution.

A philosopher tells us "every man has at bottom that feeling of egoism which leads him to prefer the place where he finds himself the most comfortably situated," and the fact that this is so is apt to make us self-centred, a bit selfish and personal. However, the invisible steam-roller of progress usually forces the will of the many upon the few, for the public good.

Feed knowledge to the ignorant and it will not take them long to find out that they are entitled to treatment as human beings and a more just opportunity to live out their existence. Almost always the plebeian had to fight for what he strove for: very little was ever handed to him on a golden platter. The darkness of ignorance among the masses usually departs before a few leaders who bring the light of knowledge, the result being that people learn that they should have what they have been deprived of. Humanitarian motives are too often dubbed socialistic.

"Every man for himself and let every one take his chance," is the prevailing spirit in nearly all humans, and it is not human nature to hurt one's self in order to do good to another, allowing for infrequent exceptions. The struggle for existence sifts itself down to a struggle for money, and members of the medical profession are fear-

ful of the health insurance proposition mainly for that reason, say what they may. Self-preservation first, others after.

The recent revolution in Russia, in which the Czar was deposed and the government completely over-thrown, illustrates the power of the mob when there is a unification of purpose. There must come an adjustment in the laws of living so that the wage earner can have a better opportunity to unload the burden of poverty: the medical profession will do its part if it will assist in devising a way by which the burden of illness will become less exacting financially to those who suffer from it.

There is no need to call upon the imagination to portray a scene in a sick chamber, the doctor in attendance, poverty stamped everywhere, illness has consumed what few dollars the family had, death claims a victim, relatives contribute to pay the funeral expenses and the doctor's bill is forgotten. Such scenes have been impressed upon the minds of most physicians. In the struggle for existence, sickness is too often the destruction of the financial well-being of the family.

Another phase is where a person has accumulated a saving of two or three hundred dollars with a view toward the future, is taken ill, an operation is necessary; instead of being sent to a public hospital, he is taken to a private one; the operator's fee, hospital charges and loss of time and income wipe away the snug savings. Such a happening is one of the tragedies of life to the wage earner, who cannot rise above such small wealth. There is no great grief over it usually, because it is an inherited custom—"to come into this world naked and bare and to go out of it clothed with troubles and care"—so it is charged up to misfortune.

There is some protest among the wage earners: they feel they should be exempt from their portion of the proposed tax. Others claim that health insurance is not a "constructive cure" that what is needed is a living wage. As there is not much likelihood of capital and labor embracing in a mutual caress, it is better to accept a measure of relief than none at all.

That there is urgent and real need of social insurance one has but to take the word of authorities in a position to know. According to Professor Ward, of Boston University, "60% of the adult male wage earners are not earning enough to provide for the average family of five with physical efficiency. There has been a steady decline in real wage, measured by its buying power, since 1900." Poverty produces impoverishment, sickness, public burden; institutions become crowded, the human asset deteriorates; all because there are handicaps and burdens in life which are impossible for the great majority of people to overcome.

The under-dog has been trimmed so long that his susceptibility to complacent subserviency has become an inherited trait, and the vast army of toilers live according to the dictates of the few, without whimper, until poverty and hunger become too much; then they rise in might, are listened to and sometimes heeded. The rich use the power of wealth to become richer, at the expense of the poor; it remains for them to abide by the "writing on the wall" and come down to a level with average humanity in finding a way out of the chaos.

A physician who uses his art to reap unjust gain becomes a samaritan of merciless mercy, without credit to himself or his profession. The medical profession possesses relatively few such men, to its honor; there

is no profession which dispenses as much charity, of constructive benefit to mankind.

It is natural for a practitioner of medicine, who has built up a large practice, without being unfortunate in acquiring a large number of delinquents, to spurn any measure interfering with an agreeable method of doing business; but all must sooner or later awaken to the fact that conditions demand something be done to relieve the over-load placed upon the family of the wage earner during times of illness. Health insurance will give the wage earner the maximum of benefit and the physician a just remuneration for his services, if constructed to be adequately mutual and compensatory. No successful business establishment would consider for a moment carrying 30% delinquent clients, yet general medicine carries at least that burden. Health insurance would eliminate the delinquent, the doctor would get paid for all his work; tho the average fee be less, his income probably would be more.

The stand taken by a large number of protestants is strongly antagonistic, many of whom, by the way they talk, feel that the adoption of compulsory health insurance would certainly destroy them, and be of questionable benefit to the wage earner. If it should happen that the government gave them a choice of accepting a standard fee for service rendered to wage earners—taking their chance on receiving same, or charging up work done to the government under a health insurance scheme, it is evident that they would choose the latter. So it is a question of money with them,—self first; the devil take the hinder-most.

What a great protection life insurance furnishes to the home! How often it tides the family over the hardships accrued thru illness and death! A proper system of

health insurance should provide a goodly amount of protection against the encroachments of disease among humans; and, as humanitarians, the medical profession should do all in its power to lessen the burden disease brings upon the home.

Some fear that when health insurance becomes a reality, a maximum fee for special medical and surgical service will follow, and those who are earning more than the twelve hundred dollar limit will demand the same fee standard, which argument is obviously fallacious and inconsistent. Because some are entitled to what others are not, it is no reason why they should be denied a benefit because others are apt to demand the same consideration.

If health insurance eventually becomes adopted by the nation, or separate states, the medical profession, as well as the laity, will have to get used to it; this generation may find it hard, but the next will grow into it. Workmen's compensation is almost national in scope, furnishing protection to the injured during period of incapacity: why deny the wage earner the benefit of participation in creating a fund which will protect him against the indebtedness arising thru illness?

In a recent address before the Actuarial Society, President Hunter defined Social Insurance as "an endeavor to give a measure of social justice thru the assumption by the community of the burden of the loss which the individual sustains thru accident, death, sickness, invalidity, unemployment and old age." He has aptly epitomized the social status of humanity, in that he recognizes the inability of the wage earner to successfully meet the exactions which illness entails.

Health insurance is better, and more fair, to the medical profession than contract

practice. The three methods or plans proposed by the Committee of the American Medical Association are: per capita apportionment, contract (local funds, corporations, societies), and per visitation. We believe that the open panel (free choice of physician), per visitation scheme the best plan.

Health insurance may be compulsory or optional; promoted by state, or insurance companies. State insurance is the cheapest and best; the insured getting better attention than if private insurance companies handled it for a profit to themselves. Optional insurance may be tried; the insured either paying his own premium, or, if a group arrangement optional plan can be devised whereby the employer, employee and the state mutually contribute toward the premium, benefit associations might be formed.

Other means by which the health of the nation might be supervised more precisely than under the present system of practice would be thru district inspection; each physician in his district held responsible for the health of an allotted number of inhabitants, with a system of home inspection similar to school inspection; and if anything be found wrong, it can be remedied by the family physician, or proper official.

Another way by which a person may guard against the hardships of illness, and advocated by those not in favor of the health insurance plan, is to institute Cash Benefit Insurance; the insured receiving cash payments, in proportion to amount of premium paid, while incapacitated. Such insurance ought to be practical, because, if State-owned, would be profit-free.

Another plan by which the wage earner could be looked after is by the nation or state taking over the practice of medicine

and employing physicians to look after the toiling population. Such a method, while it would prove effective from the viewpoint of efficiency, would destroy the identity of the medical profession and place a damper on individuality.

The two adopted means for cheap medical service, past and present, are lodge practice and contract work. Lodge insurance discriminates against the physicians of a community in that it distributes in rather an unfair way, by means of contract, a large number of persons that would otherwise be divided among other members of the profession; collectively, the lodge physician makes money, but, *per capita*, the insurance is too cheap, deprives the physician of his independence, and is apt to make him lax in his service. Industrial contract work, in which the physician employed cares for the welfare of the employees while employed, is to be encouraged, but when injury or illness necessitates home treatment, it should not infringe upon the rights of the family physician. Contract work, in which a physician agrees to care for a large number of families is not conducive to the welfare of the other physicians in the community and may be placed in the same category as lodge practice.

"The people must pay for the services of good doctors," has been said more than once. Yes, by all means! but not inordinately,—not beyond their ability to pay. And while the usual medical charge is not at all excessive, the wage earner cannot, with comfort to himself and family, conveniently meet it, in prolonged illnesses particularly. If the cost of living had not increased in greater ratio than the average income during the past decade, there might be small need for health insurance at the present time, even tho it be a desirable ad-

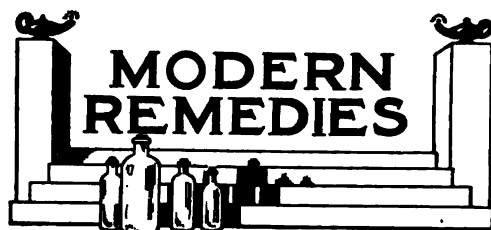
junct for community welfare when intelligently administered, and assures adequate protection for the medical profession, as well as the wage earner.

With the advent of the Great War of slaughter, privation and devastation, in Europe, came the problem of how to successfully continue the strife—to pay the bills. Nations took stock of their assets and mortgaged them, also taxed the property of their subjects. Billions have been spent for destructive warfare, that victory be achieved and subjection to the peace terms of the enemy be avoided.

The allusion is that if such vast sums can be spent to destroy life in the passion of war, it is plausible, possible and proper that the question of raising a paltry few millions to finance adequate health insurance provisions for the welfare of the nation ought not to be condemned as too great a burden to bear. Millions for the conservation of human life is far better than billions spent for its destruction.

It remains for legislative committees, medical societies, labor unions and all other interested people to devise a way, if possible, that will be fair for all. If there is a better way than health insurance to relieve the cost of illness to the wage earner, it is yet to be shown.

The most famed (democratic) autocrat that American medicine has produced, Oliver Wendell Holmes, speaking for himself, in his book, "Elsie Venner," p. 126, says: "The clergy, the physician, the teacher, must be paid; but each of them, if his duty be performed in the true spirit, can hardly help a shiver of disgust when money is counted out to him for administering the consolation of religion, for saving some precious life, for sowing seeds of Christian civilization in young ingenuous souls." His heart was in the right place.



The Treatment with Bacterial Vaccines of Bronchial Asthmatics who Are Not Sensitive to Proteins.—In a very interesting article in *Journal of Medical Research* (Sept., 1917) Walker suggests that patients with bronchial asthma be divided into two groups, namely those who are sensitive to proteins and those who are not. Of the sensitive cases, in only six per cent. was the onset of the asthma after the age of forty; possibly all of these were sensitive to proteins before this age, whereas of the non-sensitive cases forty per cent. began to have asthma after the age of forty; of the sensitive cases, forty-three had their onset of asthma previous to the age of twenty, whereas of the non-sensitive cases only 15 per cent. began to have asthma before the age of twenty.

Only twenty per cent. of the sensitive cases had evident chronic bronchitis, whereas forty-five per cent. of the non-sensitive cases had evident chronic bronchitis; only one per cent. of the sensitive cases had evident cardiorenal disease, whereas twenty per cent. of the non-sensitive cases had such evidence. Therefore, it may be stated that it is unusual to find patients with bronchial asthma who became sensitive to proteins after the age of forty, that nearly half of the sensitive asthmatics have an onset of asthma previous to the age of twenty, and that chronic bronchitis is relatively not common and cardiorenal disease is rare among sensitive asthmatics. The opposite of these statements is true for non-sensitive asthmatics.

Occasionally, the serum of non-sensitive patients with bronchial asthma agglutinates strains of *strepto. pyogenes aureus*; in such cases treatment with vaccines of this organism should be given and relief from asthmatic attacks usually results.

Occasionally, attacks of bronchial asthma are relieved by treatment with diphtheroid vaccines; in this study, one patient in six was relieved by such vaccines.

Attacks of this affection, or at least symptoms which resemble those of bronchial asthma, may be associated with conditions or diseases which are quite remote from this malady. It is quite possible that so-called bronchial asthma in patients who are not sensitive to proteins is not true asthma at all. It is evident that cardiac, renal, pulmonary and pituitary disease all may cause symptoms which simulate bronchial asthma.

Aluminum and Its Relation to Cancer.

—Guy (in *Medical Times*, July, 1917) states that he has found aluminum beneficial as a therapeutic agent when given internally in various disorders as follows:

As a hemostatic its action is certain and rapid in hemorrhage of the uterus, as in childbirth, fibroids and cancer; in hemorrhage of bladder (one case of over a year's duration following dilation of a stricture), also in bleeding hemorrhoids. Because of its powerful action on all mucous membranes it is especially valuable in nasal, aural and bronchial catarrhal disorders, also in cases of phthisis accompanied by fetid breath, in chronic diarrhea and constipation and in certain forms of gastric and intestinal conditions.

Externally, aluminum is in common use. It destroys exuberant growths as in seborrhea, ringworm, psoriasis, and is beneficial in acute and chronic eczema, granulating sores and wounds, and in the treatment of burns and similar injuries.

Aluminum being destructive of cell growth, it necessarily follows that those elemental salts which stimulate cell production should not be administered to cancerous cases.

Among those elements that are incriminated are calcium, phosphorous, nitrogen and potassium, especially potassium iodide.

Too many cases are aggravated and made malignant by the use of the last named drug and when the diagnosis is in doubt a Wassermann test should be made.

It can readily be understood that where excessive cell growth is at fault, those remedies which stimulate cell production should be scrupulously avoided. A diet eliminating meat, fish and eggs should be insisted upon, and at the same time com-

plete evacuation of lower bowel is most important.

From results obtained by these measures, coupled with the administration of aluminum in proper dosage, the author declares that cancer in an early stage can be cured, its recurrence after operation avoided, and still more important, its non-appearance among our people assured.

Clinical Experience with the Use of Vaccines in Diseases of the Ear, Nose and Throat.—Coates in *J. A. M. A.* (Jan. 20, 1917) declares that only the threshold has been passed in the study of immunology as applied to ear, nose and throat diseases.

Probably the most general adaptation of vaccines to ear, nose and throat practice has been their use for the prophylaxis of acute rhinitis or common cold.

In case the patient is subject to repeated acute colds, cultures taken during one of these may be used for vaccine preparation and prophylaxis against future ones with most excellent results.

Babcock, as well as others, has called attention to the value of autogenous vaccines in the treatment of essential asthma. His method of combating this distressing affection is to search most industriously for the source of the protein absorption and to eradicate it, if possible, using an autogenous vaccine, in addition to surgery, if the focus is found in the body. Besides that, or if no such focus is found, he makes an autogenous vaccine from the bronchial sputum, which can always be obtained in large quantities in these cases.

There are six more or less distinct conditions of aural infection, all but one related to each other, in which vaccines have been used with some degree of success.

If vaccines have not fulfilled all of their early promise, they have at least given us a very effective extra means of combating infection, especially if used in conjunction with skilful and intelligent surgery. Surely little harm will or can result from their use, even by the novice, provided the injections are given hypodermically, rather than intravenously, as in the latter method the reactions are at times exceedingly severe and alarming. In ozena, it seems as if vaccine therapy alone might solve a problem which

has been puzzling clinicians for years, and until some more efficient substitute is discovered, vaccine therapy has its distinct place as a therapeutic measure in diseases of the ear, nose and throat.

Seventeen Cases of Goiter Treated with Injections of Carbolic Acid, Iodine and Glycerine.—Sheehan in *Medical Record* (Oct. 6, 1917) records his experience in treating 17 cases of goiter.

Enlargement of the thyroid gland, particularly that form in young women, can be cured, or at least the symptoms of the enlargement can be greatly minimized by these injections.

No untoward symptoms have been observed by the author from the injections. Neither is there any bad after-effects from reducing the enlargements of the gland by this method.

Altho only two cases of the graver forms of goiter have been injected with goodly effect, still the number of cases injected have not been sufficient to draw any conclusion in the efficacy of the treatment of these forms by this method. Certainly it is worth while trying in these forms, particularly so when the case is not a fair surgical risk.

It is well when the injection treatment is started to combine it with a course of arsenic and with some form of phosphates, which the author uses as follows: Five drops of Fowler's solution is given in half a wine glass of water three times a day—after eating each meal—for one week; then ten grains of calcium glycerophosphate is given for one week, alternating each one every week thruout a period of from eight to ten weeks.

The Antiseptic Properties of Acriflavine and Proflavine and Brilliant Green.—Browning, Gulbransen and Thornton in *British Medical Journal* (July 21, 1917) give the results of their experience in using these antiseptics.

Flavine compounds and brilliant green are antiseptics which exert a slowly progressive bactericidal action. Concentrations of these substances, which at first inhibit and finally kill bacteria, are without harmful effect on phagocytosis or on the tissues

locally or generally; hence they are especially suited for therapeutic purposes in infected wounds. Flavine compounds may be applied to the peritoneum with safety.

Flavine compounds (acriflavine and proflavine) are enhanced in their bactericidal potency by the presence of serum; brilliant green, in common with most other antiseptics, is reduced in its activity by serum.

The most suitable method of application of an antiseptic for therapeutic purposes must depend very greatly on its behavior in the presence of serum. When the antiseptic is inactivated by serum, frequent renewal of the watery solution is indicated as in Carrel's procedure; this of course, is only permissible provided that the substance is not in itself toxic.

Brilliant green satisfies the requirements for application by repeated irrigation, as a powerfully bactericidal solution (1:2,000) in water is practically innocuous to the tissues.

The application of the flavine compounds for the purpose of preventing the onset of septic manifestations in early wounds is especially recommended by the authors as also is their use for preventing exacerbations after operating in areas already infected.

Operative measures are an essential preliminary to the effective use of therapeutic antiseptics in wounds, since the antiseptic can act only when brought into intimate contact with the infected tissues.

Prostatitis.—Wallace in *Southwest Medical Journal* (Jan., 1917) reports having found the following prescription efficacious in the treatment of this distressing malady—

Pot. citratedrams 8
Tr. hyoscyamusdrams 6
Tr. belladonnadrams 2½
Antipyrindrams 1½
Elix. lactated pepsin qs. oz. 4.

M. et Sig.: A teaspoonful every three hours.

In the treatment of chronic prostatitis, the prostate and the seminal vesicles are massaged, followed by a posterior retrojecting irrigation of silver nitrate solution 1 to 3,000 or a deep instillation of one-quarter silver nitrate solution is made to the eroded prostatic urethra.



The Ductless Glands in Cardiovascular Diseases and Dementia Praecox.—Sajous reports in the *New York Medical Journal* (May 26, 1917) that acute dilation of the heart strain observed in otherwise healthy athletes and the so-called irritable heart of soldiers, is but an example of adrenal exhaustion. It has been shown that the secretion of the adrenals causes contraction of the heart muscle. The secretion is poured into the inferior vena cava, the blood of which carries it to the right heart. It is the right heart which is dilated. Digitalis or strophanthus, which stimulate the adrenals is therefore indicated. This, however, is not the best treatment, inasmuch as extreme deficiency of adrenal secretion has to be dealt with. Hypodermoclysis in small doses or a mild preparation of posterior pituitary, because of its wealth of adrenal substances with absolute rest to enable the adrenals to recover their secretory activity, are more rational resources.

The types of both hypertrophy and subsequent degeneration are but counterparts of the form of arteriosclerosis traced by Sajous to excessive activity of the thyroid and adrenals.

The familiar functional relationship between the various ductless glands suggests that asthenic disorders of the latter have some mental kinship with dementia praecox.

The mental symptoms of Addison's disease also show considerable kinship with those of myxedema. We may thus find in the deficiencies of other ductless glands and, in the stigmata of these various organs, as Holmes has suggested, a possible underlying cause of dementia praecox which may be of prime importance.

In all these abnormalities we must bear in mind the influence of toxins, exogenous and endogenous, which are now known to have so great an influence on mental dis-

eases. Since the functions of the ductless glands include the conversion of poisons into eliminable wastes, their insufficiency will entail an accumulation of these poisons, or of intermediate wastes—which are also toxic—and thus give rise to the very conditions which promote certain forms of mental aberration. Important also are the diseases of children in the genesis of dementia praecox, since hemorrhages in the various ductless glands may then occur which are followed by sclerotic lesions that impair their efficiency. Another danger that must not be overlooked may be found in the lesions that are sometimes produced in the brain itself, in the course of acute febrile infections.

Clinical Aspects of the Diseases of the Ductless Glands.—Sailer in the *New York Medical Journal* (June 16, '17) says the most interesting question concerning diseases of the glands of internal secretion is the causation.

In diminished functional activity of the pituitary and thyroid glands substitution therapy is most effective. This is accomplished by the administration of the gland substance or various materials derived from it. Implantation has rarely been tried. In cases of diminished suprarenal activity substitution seems to be only of the most transient effect.

The author reports observation of a case of ovarian implantation in a woman suffering from profound nervous depression following the removal of the ovaries years before for painful menstruation. While the implant in the wall of the abdomen persisted, her symptoms, intense headaches, vaginismus and depression were entirely relieved. As it atrophied, the symptoms returned, perhaps less severely. No physical

evidence of its efficiency could be discovered.

Sedwick in a recent communication presented a case of pseudohypertrophic muscular dystrophy, in which, as a result of careful study of the metabolism, he reached the conclusion that there was deficient pituitary activity. Accordingly he fed the child upon pituitary substance with marked improvement. This observation if confirmed is of the utmost importance and opens up a large field for the investigation of the various degenerative diseases.

The economic factors involved are considerable. Aside from the incapacity and death produced by these conditions, which are common to all diseases, there are distinct alterations in the character that tend to render the individuals less useful members of society.

The changes in character and intelligence that ensue in cases of cretinism and myxedema after the administration of thyroid are obvious.

A change for the better, more initiative, better work at school, increased cheerfulness all followed in the patient with Froehlich's syndrome who was treated with pituitary extract.

Further Clinical Experience with Corpus Luteum Organotherapy.—Experience with the desiccated corpus luteum extract in a series of about 80 patients is summarized by Dannreuther in the *New York Medical Journal* (Oct. 20th, 1917) as follows:

1. Corpus luteum extracts are superior to similar preparations made from entire ovaries.
2. Suitable cases for corpus luteum organotherapy must be carefully selected.
3. The indications for the administration of a lutein extract are distinct, and its use should be limited to these conditions.
4. The administration of corpus luteum is followed by certain definite phenomena.
5. It is of the utmost importance to use an extract obtained from the ovaries of pregnant animals only.
6. Five-grain doses, three times a day, are usually all that are required.
7. There is great necessity for constant supervision of the blood pressure of patients taking corpus luteum; and it should not be

permitted to fall more than 15 millimeters below the patient's normal pressure, and never below 90 millimeters.

8. Personal experience has demonstrated that corpus luteum organotherapy is of considerable value in clinical practice.

9. In one patient menstruation has been established after complete extirpation of all ovarian tissue, by the use of corpus luteum extract.

The value of corpus luteum organotherapy, especially in the form of the soluble aqueous extract, in the so-called functional disturbances of the ovarian internal secretion is quite evident. Conversely, it has its limitations, and it would be folly to expect success in the presence of gross pathological lesions within the pelvis.

Control of dosage is exercised rather by shortening or prolonging the intervals between the doses than by varying the quantity given at any one time. Patients with pernicious vomiting in pregnancy tolerate most frequently repeated doses. In these cases, it may be given daily without apprehension, unless some manifestation of overdosage occurs. For almost all other conditions wherein it is indicated one dose every other day usually suffices, and the intervals may be lengthened gradually as the symptoms are controlled or the blood pressure decreases.

Ovarian Organotherapy.—In *Journal of American Medical Association* (Sept. 1, 1917) Graves arrives at the following conclusions regarding the use of ovarian extract:

1. Studies in ovarian organotherapy are at present necessarily confined for the most part to clinical observations. Such observations, tho admittedly inaccurate may, to a limited extent, be of scientific and practical value.
2. Personal clinical experience with preparations of ovarian substance has revealed that preparations of the corpus luteum alone are less efficacious therapeutically than are those of the whole ovary.
3. Theoretical knowledge and scientific experimentation tend to show that an important part of the ovarian internal secretion is elaborated by the interstitial cells.
4. It is probable that the interstitial cells correspond to the lutein cells of the theca

interna of the atretic follicle. In some animals these cells become disaggregated and appear as glandlike masses (interstitial gland); in others they remain confined to the follicle by the outside envelope (theca externa).

5. The interstitial cells, therefore, correspond to the theca lutein cells of the corpus luteum.

6. The interstitial cells of the ovary are analogous to the testicular interstitial cells of Leydig, which are known to elaborate an internal secretion.

7. Ovarian therapy, for its best effectiveness, should include at least the product of the interstitial cells. Preparations should, therefore, comprise the ovarian stroma, in order to take advantage of the atretic follicles.

8. Preparations made from the corpora lutea of pregnancy proved too toxic for practical use.

9. Preparations made from the ovaries of pregnant animals, with exclusion of the corpora lutea, proved superior therapeutically to preparations of whole ovaries of non-pregnant animals that included the corpus luteum.

10. The superiority of the follicular products of pregnancy is explained by the fact that during pregnancy follicle atresia is especially marked, and is accompanied by a corresponding increase in the activity of the interstitial cells.

The Frequency and Significance of Dysfunction of the Internal Secretory System in the Feeble-Minded.—McCord and Haynes in the *New York Medical Journal* (March 31, 1917) state that the essence of feeble-mindedness lies in organic defect, morphogenetic or chemical, having origin in heredity or in embryonic or post-natal malconditions, involving the organism as a whole or thru elective action, specific systems or organs.

It is duly recognized that the system of internal secreting glands is but one and not the exclusive source of substances influencing the diversified growth—differentiation processes.

Stimulus for the conception of internal secretory anomalies as a causative factor of certain mental deficiencies arises from the frequency of simultaneous occurrence of

feeble-mindedness and developmental defects of a character known to be influenced by the internal secretory system. If comparison is made between the anomalies of body activity, the outgrowth of known endocrinous dysfunction and impaired body activity, demonstrably associated with feeble-mindedness, the two in many respects coincide.

1. Of the glandular cases seen in the feeble-minded, heredity stands out as the foremost factor in the etiology.

2. The demonstration of glandular syndromes in the feeble-minded does not in itself allow any inference that the feeble-mindedness is attributable to the glandular dysfunction. The glandular disease may determine the increasing defect but more often the coexisting feeble-mindedness and glandular defect are both the outcome of a common cause.

3. Promiscuous treatment of the feeble-minded with glandular derivatives is unprofitable and unwarranted. In established glandular types among the feeble-minded, more often glandular treatment is of no distinct and lasting value.

4. In border line cases of glandular disease with trivial mental inadequacy, glandular therapy may prove of especial value. More often in these cases no true mental deficiency exists, and all manifestations of mental inadequacy are referable to the glandular malfunction. In such cases glandular treatment persistently carried out may be the factor deciding between normality and increasing defects.

The Endocrine Function of the Pancreas and Its Relation to the Sex Life of Women.—Carlson in *Surgery, Gynecology and Obstetrics* (Sept., 1917) reports that complete or nearly complete extirpation of the pancreas results in fatal diabetes. Recent investigations of the condition of the pancreas in diabetes have shown that there is usually more or less degeneration of this gland, especially in the island tissue. The conclusion has been established beyond a doubt that the pancreas is absolutely essential to life and to carbohydrate metabolism.

The endeavor to determine how absence of the pancreas causes diabetes is practically a record of repeated failures. The leading

idea in all this work has been the internal secretion theory, or that the pancreas yields some substance to the blood in some way necessary for the oxidation of the sugar by the tissue cells. In the absence of conclusive demonstration of internal secretion, the possibility that the work of the pancreas in maintaining normal sugar metabolism consists of a detoxication process must always be kept in view.

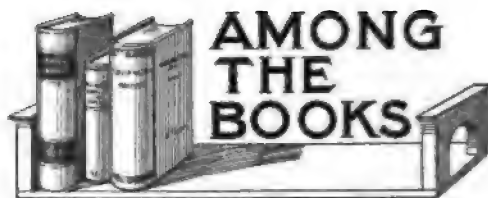
All evidence supports the view that some substance or hormone secreted by the islands of Langerhans into the blood is necessary for utilization of sugar by the tissues. This function is specific for the pancreas. Other endocrine organs may influence sugar metabolism in a superficial way by altering the sugar mobilization (adrenals, thyroid), or by increasing or decreasing the rate of oxidation in the body in general. The rest of the endocrine glands cannot maintain the power of the tissues to oxidize sugar in the absence of the pancreas, and the hypo- or hyper-activity of other endocrine glands do not produce actual diabetes in the presence of a normal pancreas.

While the failure of the tissues to use sugar in the absence of the pancreas is the central and definitely established fact, there are probably other primary defects involved in the development of acidosis, lipemia, increased metabolism, lowered resistance to infections, etc.

All evidence points to the view that true diabetes mellitus in man is primarily the result of pancreatic deficiency.

There is, at present, no organotherapy of diabetes, experimental or clinical.

Nor is there any evidence of any specific relations of the endocrine functions of the pancreas to the gonads, male or female, or to menstruation, pregnancy and lactation. Absolute diabetes probably renders conception impossible. Partial diabetes under careful dietary control permits of normal sex life of women (menstruation, normal pregnancy, normal child, lactation), and pregnancy under such conditions does not aggravate the diabetes. But in the absence of such dietary control the condition of pregnancy aggravates the diabetes in the mother, and uncontrolled diabetes in the mother is extremely injurious to the fetus. There is some evidence that in late stages of pregnancy the fetal pancreas may function for the mother.



Food Economy.—The matter of diet is one that concerns everyone nowadays. Indeed it is a common opinion freely expressed that the food supply will probably decide the issue of the war. Economy in diet must be practiced by all classes of society. By economy of diet is meant, however, not so much the prevention of actual waste of food as the selection of food materials which will best form a cheap and well balanced diet. The man in the street is strangely ignorant with regard to the scientific value of foodstuffs. The *Physiology of Food and Economy of Diet* by Professor W. M. Bayliss (*Longmans, Green & Co.*) gives in a lucid manner such information. It deals with the uses of food, the classes of foodstuffs, their quality, digestibility and the possibilities of economy. The book was written in the first instance, to teach the British people how to economize in diet in the present period of stress. Most of the contents are applicable with especial force to the American people at this time. The book should be carefully read and well digested, as it is not only a very interesting contribution to the subject but one that cannot fail to prove of great practical value from many standpoints.

Medical History.—It is a common lament that medical men pay too little attention to the historical side of medicine. Undoubtedly this is due in no slight degree to the careless and uninteresting character of most attempts to handle medical history.

A book which is notably free from these faults, and which, on the contrary, at once testifies to the patient, scholarly research of the author, as well as to the nicely balanced judgment with which space and prominence are given to difficult eras, or to different sections of the science and art of medicine is Dr. Albert A. Buck's *The Growth of Medicine* (*Yale Univ. Press, 1917*).

Of primary interest, of course, to the stu-

dent of medicine, or to the busy practitioner who is not so self-absorbed but that he would know how he comes by the accumulation of the observations and records which form the basis of his daily practice, this volume will also prove interesting to every intelligent layman.

Dividing his subject into three parts—Ancient, Medieval, and Medicine during the Renaissance, the author has brought together, and passes in review before us, the superstitions, the observations, the theories and the practices of the men of medicine whose names have come down to us from the earliest mists of antiquity to almost yesterday. Weaving these together into a connected narrative, he has not failed to season it judiciously with quotations, with a quip here, or a jest there, and all of which adds immeasurably to the readability of the whole text.

The excerpt from Aristophanes' play is delicious, so also, if rather more biting, is Priscian's picture of a consultation of practitioners of his day in the sick-room.

It is no exaggeration to state that we have in this admirable work a veritable cyclopedia of the growth of medicine—reliable, readable and worthy of a place on the bookshelf of every real student of medicine.

The volume is issued with a care and attention to its paper, typography, and proof reading, and in a dress generally which not only reflects high credit upon the publishers but that is quite in keeping with the worth and excellence of the material it presents. No physician to whom medicine is a profession will want to be without this splendid book.

Education and Living.—The stress being placed upon matters educational brings home the importance of physicians being more thoroly familiar with educational theories and practices. In the pages of the *New Republic* appears a series of articles which have been reprinted with slight modifications under the title "Education and Living." The educational philosophy underlying the volume is recognizedly that of John Dewey who appreciates education not as an isolated process but as possessing an identity with living. The combination of organized

work, study and play, in the development of mental growth points out the modern conception of education for living.

There are few books written with more simplicity and soundness of vision than *Education and Living* by Randolph Bourne, (Century Co., 1917). It merits reading particularly by medical men who, after all, can not divorce themselves from the educational responsibilities of parenthood and their obligations as guide, counsellor, and friend to the parents of the rising generation.

Psychanalysis.—The importance of psychotherapy has long been recognized by physicians and laymen. In the minds of many, however, this field is now fully covered by psychanalysis. While the literature of the day teems with articles pointing to the acceptance of Freud by a large number of writers there is not a full appreciation of the differences in thought upon the general subject as involved in the theories of Jung, Adler, Sachs, Maeder and various other serious students of psychanalytic problems.

Because of this fact there is a distinct value in Bjerre's excellent book, *The History and Practice of Psychanalysis*, (Richard G. Badger, New York). Written in excellent style and adequately translated there is presented a well organized discussion of the development of psychanalysis with criticisms of the various theories, together with numerous pointed suggestions as to the possible modifications which the future may determine. In his words, "Psychotherapy must not only endeavor to make free the soul-life and to guard it from all primitive conceptions that still live in modern layers of the old religious systems; it must try to drive this effort, which has been going on for centuries, towards a definite goal. It is unnecessary to point out that while this implies a freeing of the deepest, noblest forces in human nature, it also implies a liberating of all that for which humanity has yearned when it sought the divine."

The Freudian Idea.—As a presentation of the strictly Freudian idea there is a

wealth of material brought together in the translation of Ferenczi's Contributions to Psychoanalysis. (*Richard G. Badger*, New York). Few of the papers are new and most of them are in the weird technical language to which the psychoanalyst has become accustomed, but which is still confusing to those who view the subject at long range. That this volume holds much of interest to the student of the subject will be readily apparent.

Psychic Problems.—In connection with these two volumes attention is merited by three monographs (*The Nervous and Mental Disease Publishing Co.*, New York City) which provide splendid expositions of the Dream Problem by A. E. Maeder, Wish Fulfilment and Symbolism in Fairy Tales by Franz Ricklin, The Significance of Psychoanalysis for Mental Sciences by Otto Rank and Hanns Sachs.

The rapidly growing literature is beyond the time possibilities of busy practitioners, but it is nevertheless essential that an intelligent understanding of the subject be secured in order to keep pace with a significant psychological development that is so valuable in medical practice. For this purpose the above enumerated are exceedingly helpful and merit careful reading.

What to Eat.—Dietetic therapy is now an important branch of medicine. There are many practitioners who hold that diet is the main factor in the conservation of health, and that if a person's diet is carefully regulated, his life will be prolonged accordingly. It is undoubtedly true that diet plays a prominent part in the prevention of disease and a notable role in the treatment of not a few serious maladies.

Recently, the literature dealing with diet has been growing rapidly, a fact undoubtedly due to the demand by the public for reliable information on the subject. In response to this demand the second edition of *What to Eat and Why*, written by Dr. G. Carrol Smith has just been published (*W. B. Saunders Company*, Phila.). The first edition of this work had a deservedly cordial reception and was quickly ex-

hausted. The second edition has been thoroughly revised and a good deal of matter bearing on the newer phases of the subject has been incorporated. The work supplies a useful *vade mecum* of dietetic therapy for the practitioner and medical student, and the more it is used, the more its practical usefulness will be appreciated.

Personal Hygiene.—Prophylactic medicine is decidedly the medicine of the future, which is, in effect, to say that hygiene is the medicine of the future. Under the term hygiene, may be included sanitation and public health and personal hygiene. While sanitation and public health have bulked large in the estimation of the people, personal hygiene which, after all, is of considerably greater importance has been greatly neglected. That is, it has not been made a part of the popular literature in the same way as has the question of public health. It is, therefore, refreshing to find that personal hygiene seems now to be coming into its own and books dealing with the subject are becoming fairly frequent. *Personal Health* by Dr. William Brady (*W. B. Saunders Company*, Phila.) is an excellent example of the salient features of personal hygiene discussed briefly but to the point. The little book is full of useful information and should serve as a valuable educative medium, in a sphere where education is sorely needed.

Feeding the Sick.—"Some ha'e meat, and canna eat, And some wad eat that want it, But we ha'e meat, and we can eat, And sae the Lord be thankit." In the above lines the inspired Scotch ploughman showed his understanding of the food problem. The sick, whose fastidious appetites must be stimulated by a tasty diet, the poor who want food but cannot get enough, and those lucky individuals who have sufficient wholesome food and can do ample justice to it, are well classified by Burns. However, since the days of Burns, views as to food have altered considerably. In his time little was known concerning the physiology of food and an undue importance was given to the value of meat. Knowledge of the scientific value of foodstuffs has made

great strides within recent years and it is now recognized that in the prevention and treatment of disease, suitable diet is a factor second to none in importance. Modern Dietetics by Lulu Graves (*The Modern Hospital Publishing Company*, St. Louis, Mo.) tells exactly, concisely and clearly how the sick should be scientifically fed. There are also in the book useful studies on feeding well people. Miss Graves first published the papers, which form the basis of this work in *The Modern Hospital*. She is to be congratulated on the production of a volume which will serve as an excellent reference book to medical practitioners, medical students, hospitals and institutions, dietitians, nurses and so on. The writer knows her subject and her book may be relied upon as authentic.

Blood Pressure.—Of recent years the matter of blood pressure has received much attention at the hands of heart specialists. Its significance is not as yet entirely understood, but great advances have been made in the interpretation of blood pressure from the standpoint of diagnosis.

Dr. Francis Ashley Faught is the author of a book, *Blood Pressure from the Clinical Standpoint* (*W. B. Saunders Company*, Phila.) in which he has presented in easily accessible form, the pith of medical literature bearing on blood pressure studies in their relation to medicine, not only in cardiovascular and renal conditions, but also in many diseases in which clinical observation has shown the information obtained by the sphygmomanometer to be of value. Indeed, the work deals mainly with the science, if it may be thus termed, of sphygmomanometry, and the various methods employed therein.

The work is an authoritative exposition of the subject and no practitioner who recognizes the importance of blood pressure determination, should be without it.

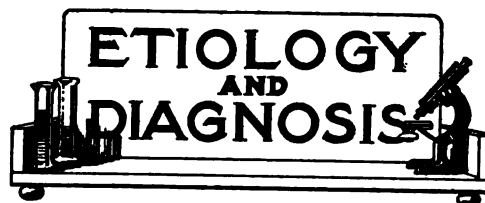
Preventive medicine is now recognized as of transcendent importance compared with the traditional therapeutics so long taught in our medical colleges. Popularizing the main facts involved in the preven-

tion of disease is a service worthy of the pen of any public-minded scientist. Kenelm Winslow in *The Prevention of Disease* (*W. B. Saunders Company*) has succeeded in compiling for the laity a resumé of our present knowledge of the scientific principles underlying the conservation of health.

Various excellent names appear as contributors of introductory notes to various chapters, tho they do not contribute in the slightest to the worth of the material presented. The purpose of the introductory notes appears to be to serve as a guarantee of the value of the matter presented, but a statement such as the following, "The laity will welcome the chapter as presenting much desired and highly prized information expressed in clear and concise language, authoritative and reliable" does not in any way determine whether the chapter content will or should be accepted by the reader.

To illustrate, a note would not make one more willing to accept the statement "Pto-maine poisoning is a fashionable term covering, in popular usage, symptoms produced by almost any unknown germ disease with abdominal symptoms." As a matter of fact, the introductory notes appear to mar rather than to improve the text, which in itself is of so high a standard that it does not require the support of anyone to guarantee its acceptance as authoritative, well balanced, and scientific information.

The book is written on a high plane of general excellence, and merits consideration by the profession as a valuable and serviceable book for the education of the laity.



Retained Secundines.—A Study of Etiological Factors. This paper by James E. Davis, and read at the recent meeting of the American Association of Obstetricians and Gynecologists, involves a study of the literature from 1878 to 1917 and of curettings or other material obtained from 474 routine gynecological cases in which were found 70 pathological sections of unresolved decidua chorion, or other fetal tissues, representing approximately 17% of cases in which pregnancy was almost wholly unsuspected.

Ten per cent. of all pregnancies end in abortion, according to popular estimates. According to many statistics 72% of abortions are incomplete and of these 45% become infected, whereas infection follows in 78% where criminal procedures are used. Criminal measures are the greatest direct and indirect causes of abortion, 55% to 65%. Syphilis and endometritis are also prominent factors. A first abortion often leads to subsequent miscarriages and this explains 23.2% of all cases. The mortality is given as 3.9% or ten times as great as in full term deliveries.

In spite of a thoro review of the literature in English, French and German for the period 1878 to 1917, statistical values are scarce. This is due to the secrecy observed in regard to abortion, both criminal and otherwise. Furthermore many cases pass unrecognized, such as cases of retarded menstruation followed by profuse hemorrhage.

Incomplete abortion results from difficult separation of the embryonal and maternal parts or from inadequate expulsive power. A portion which has undergone degeneration or necrobiosis may become separated alone and be expelled or retained by a rigid cervix, or as is usually the case in criminal abortion especially after the first few weeks, the fetus may be expelled leaving the membranes adherent. Malpositions of the uterus may be instrumental in an early separation and in incomplete expulsion. Frequently monsters end in abortion also.

The preplacental stage ends in the third week but the placental tissues are not well developed until the sixth week, the trophoblastic cells up to this time providing nutrition by imbibition from the extra-vascular blood and lymph of the maternal tissues.

In the human placenta the union between the ovum and the maternal mucosa is very complete, due to a gradual obliteration of the partition layers. This allows a free exchange of pabulum and excreta by the direct contact of maternal blood with chorionic villi. The embryonic tissues play a part in the digestion and assimilation of the food supplied and bear a resemblance to intestinal villi.

In recent studies the ovum is considered capable of enzymic production in its trophodermic cells by which it digests the adjacent uterine mucosa, thus forming a cavity for its implantation. The placenta is formed to control this dissolution and protect the maternal organism. But up to the end of the fourth month of gestation the katabolism predominates.

The uterine stroma is a highly labile protoplasm very susceptible to nutritional influences. Due to its colloid content it avidly absorbs fluids, thereby effecting the changes incident to pregnancy, menstruation or chorioepithelioma. This process is most marked near the chorionic villi and predisposes to hemorrhage which is easily understood from a study of the nature of the blood vessels of the uterine mucosa. In the pregnant state these vessels have practically no walls but are really blood spaces or channels thru the stroma.

And here lies the crux of the entire question

of abortion; and whether it is complete or incomplete depends upon the nature of the intercepting pathological factors.

Of these factors criminal measures comprise over 50%. Syphilis, endometritis, metritis, malposition and inadequate placental sites, all may cause circulatory disturbances leading to partial separation, then hemorrhage, death of the fetus and incomplete abortion with retained secundines.

The principles involved from whatever cause may ultimately have the same end result of determining improper enzymic production and interaction with resulting abnormal metabolism, death of the fetus and incomplete expulsion.

Diagnosis of Foreign Bodies in the Eye.—Curran in the *Boston Med. & Surg. Jour.* (Sept.) says foreign body in the eye probably causes more discomfort than all the other minor accidents combined, especially if it is situated beneath the upper eyelid or embedded in the cornea. In diagnosis it is, of course, necessary first to determine the presence of a foreign body. The patient usually comes to us, saying that something entered his eye and is causing him pain. Very often no foreign body can be found because the increased flow of lachrymal fluid has carried it off, and the patient is in pain because of the injury to the sensitive nerve filaments in the conjunctiva. We are often misled by a patient saying, "It is under the upper lid." This is because the conjunctiva is most sensitive in that region. Sometimes for the same reason a patient will complain of this pain after the foreign body has been removed. Not infrequently, in spite of the patient's story, he has found the foreign body in the cornea and often on a level lower than the palpebral fissure.

Always ask the patient if an attempt has been made to remove the foreign body. Sometimes the particle has been removed by a fellow workman who has some skill in this practice. Many physicians remove the foreign body successfully, but, because of the abrasion of the corneal tissue and the injury to the sensitive anterior ciliary nerve filaments, the patient still suffers greatly, and he consults another doctor. If the pain is severe, an abraded cornea is the usual condition we find upon examining the eye.

Our method of examining the eye is this: First, we inspect the lower conjunctival sac. This can be done by simply pulling down the lower lid and telling the patient to look up, thus exposing the whole conjunctival surface. Then we take the upper lid. Here it is necessary to evert the lid in order to expose the whole conjunctival surface. The ease with which this can be done depends largely upon the experience and consequent dexterity of the surgeon. To do this easily, have the patient look down, grasp the lashes of the upper lid, place an applicator at the base of the tarsal cartilage and evert lid, thus exposing the entire fornix.

If no foreign body can be seen in either conjunctival sac, we then examine the cornea with the naked eye. If necessary, we use a watch-

maker's glass, or if this it not successful, we illuminate the eye obliquely thru a condensor. Large foreign bodies can almost always be seen with the naked eye, but small ones require a prolonged search with the glass and condensed light for aid.

If we anticipate difficulty in locating the foreign body, experience has taught us that we can make a quicker and more thoro examination by first putting the eye at rest by instilling two drops of a 4% solution of cocaine.

There are two conditions which may confuse us: First, pigment spots in the iris; and, second, pigment stains (improperly called "rust spots") on the cornea, where the foreign body has lodged.

Pigment spots on the iris can be differentiated from foreign bodies on the cornea by illuminating the cornea at different angles, thus showing the pigment spot to be at a different level than the corneal surface.

If the foreign body becomes imbedded on the cornea it always leaves a pigment stain or so-called "rust spot." It is often extremely difficult to distinguish between a foreign body on the cornea and a "rust spot"; even the specialist cannot always do so. The stain is usually a brownish-black in color and much denser at the periphery than in the center, where sometimes clear corneal tissue can be seen. The "rust spot" in these cases resembles a ring. My experience has taught me to leave the "rust spot" for the time being, having successfully removed the particle. In the course of forty-eight hours the spot in its entirety (it resembles a small scale) can be removed.

Diagnosis of Duodenal Ulcer.—Chronic appendicitis frequently presents the same hunger pains as in duodenal ulcer, hyperacidity is not unusual and many cases show the same chronicity as in duodenal ulcer. Deaver (*Arch. Diag.* No. 1, 1917) states that the main difference between the two is the freedom from discomfort in the duodenal ulcers between the attacks, while in appendicitis the flatulency and discomfort are apt to be constantly present. But these patients with "appendiceal indigestion" usually suffer more pain after certain kinds of food, especially starchy food and red meats. The pain, however, usually is not so severe as in duodenal ulcer and radiates downward, the latter being one of the main points in the differential diagnosis. In appendicitis exercise frequently increases the local discomfort—not so in duodenal ulcer. In fact, the appendix is found diseased in so many cases of duodenal as well as of gastric ulcer, that these latter may be considered secondary conditions; that is to say, the result of infection from some other organ with the evidence strongly in favor of the appendix as the *corpus delicti*. Deaver makes it a practice to remove the appendix in practically all cases of gastric and duodenal ulcer.

Some authors claim that it is almost impossible clinically to differentiate between gastric and duodenal ulcer, but he thinks there are enough points of variation to enable such a dif-

ferential diagnosis with some degree of certainty. In distinguishing between the two we may to some extent be guided by the time relation of the ingestion of food and the onset of the symptoms. Altho the chain of symptoms of duodenal ulcer is said to be not much affected by the location of the ulcer, it is generally conceded that the longer the interval between the meals taken and the appearance of the pain and the more prompt the food relief, the lower down will the ulcer eventually be found. Therefore, if pain appears soon after eating, in one-half to two hours, and the food relief is not prompt, we may logically expect to find a gastric rather than a duodenal location. Again the radiations of pain, if any, in duodenal ulcer are usually to the right, while in gastric ulcer the pain radiates to the left as a rule. The pain also is apt to be more constant than in duodenal ulcer. Vomiting is also more frequently a symptom of gastric ulcer, as is also hemorrhage, the latter usually in the form of hematemesis, while in duodenal ulcer it is more generally melenic.

Cholelithiasis presents rather more difficulty, but care in taking the history will usually enable the experienced clinician to forecast the true state of affairs. The diagnosis is oftentimes uncertain when adhesions exist between the gall-bladder and the stomach and the duodenum, or when the gall-stones have pushed to ward the duodenum; hyperacidity being also a symptom of gall-stone disease adds to the confusion. On the whole, however, cholelithiasis is marked by such severe colicky pain with sudden and unaccountable onset, and almost as sudden and mysterious cessation, that recognition should, as a rule, be easy. Lavage will frequently cut short an attack of biliary colic, but has no influence on the pain of duodenal ulcer. In this connection Moynihan mentions the gastric crises of *tabes dorsalis*, as a possible source of error in diagnosis.

Chronic cholecystitis very frequently clouds the diagnosis of ulcer, especially of the perforating duodenal ulcer. It presents the same chronicity, tho the attacks do not last so long, the pain, hyperacidity and flatulency also present show a certain degree of relationship to food intake, while not infrequently the absence of typical jaundice in cholecystitis and its presence in duodenal ulcer, as noted in several of our cases, makes the confusion still worse.

Symptoms similar to those of chronic pancreatitis or some pancreatic involvement, such as pancreatic lymphangitis, are not rarely met with in duodenal ulcer. This is not surprising in view of the close relationship existing between the duodenum and the pancreas and the frequent infiltration of ulcer into the pancreas itself and the close intercommunication between the pancreatic and the duodenal lymphatics.

The Skin as Affected by Chronic Systemic Diseases.—Ravitch and Steinberg (*Kentucky Medical Journal*, July, 1917), say that eczema appearing for the first time in middle life or later should always render one suspicious of

nephritis and a careful urinalysis should always be made. Other dermatoses met with in nephritis are erythemas due probably to toxemia and local vascular disturbance, especially in the presence of high pulse pressure and urticaria, which would seem to be anaphylactic in origin. Pruritus is so frequent a symptom of diabetes as to be one of the most frequent causes of the diagnosis of this disease.

Variations in the secretion of the thyroid gland is known to be the cause of many dermatoses and suspected with good cause, of being at least partly responsible for even more. Basically, we find an edema-like myxomatous infiltration due to insufficient secretion, that is

perversions of internal gland secretion, especially seen in diseases of the thyroid.

Hematogenous infection of the skin from foci in tonsils, joints, heart valves or elsewhere, typified by erythema nodosum during rheumatic infections.

Gout and Infectious Arthritis.—In two clinical lectures (*International Clinics*, June, 1917), Christian considers the differential points between gout and acute and chronic arthritis.

There are three types of gout:

First, obvious depositions of urates in the bone or in the cartilage, or in both.



(Photo from Underwood & Underwood, N. Y.)

A FARM IN POLAND USED AS A HOSPITAL.

myxedema, and a dry, scaling and atopic condition due to hyperthyroidism as typified by exophthalmic goitre.

The rheumatic affections cause two entirely different kinds of dermatoses.

Dermatoses due to excretion by the cutaneous glands in excessive quantity of substances ordinarily excreted by other organs, i. e., the excess of salts in the perspiration during nephritis or excess of urea in uremia.

Dermatoses caused by the presence of an excess of irritating or toxic substances in the blood stream, owing to failure of elimination or to increase in formation.

Disturbances of nutrition or function thru

Second, in which that does not occur, but in which there are chronic arthritic changes, which exostoses and associated atrophy of the cartilage, etc., sometimes with depositions of urates in the soft parts around the bone, adjacent to the bone, but not in the bone.

Third, very little change in the joints, inflammatory change in the soft parts, but no obvious deposition of urates in the soft parts about the joints or in the bones or cartilage. In all three types depositions of urates in the ears occur giving typical tophi that are easily recognized.

In regard to the value of uric acid metabolism studies, Christian points out that we are deal-

ing with a substance which is present in the blood and in the urine in relatively very small quantities. Anything present in small quantities brings up the possibility of error in its determination. In the second place, we are dealing with a substance which in the blood is very difficult of quantitative determination, and there is still a question as to whether the methods available are satisfactory; or, to put it another way, other substances than uric acid may cause the same calorimetric changes which are used by Folin in his method of determining the uric acid.

In regard to the X-rays he states that we are justified in calling gout only those cases in which there is the typical punched-out area in the bones with thickening in the bony substance around the area.



Treatment of Bichloride of Mercury Poisoning.—Weiss (*Ohio State Medical Journal*, September, 1917) advises the following treatment, as outlined by Lamber and Patterson. A large amount of fluid should be taken by mouth—eight ounces of milk every second hour, alternating with eight ounces of the following mixture:

Potassium bitartrate	4 grams
Sugar	4 grams
Lactose	15 grams
Water	ad 16 ounces
Lemon juice or orange juice to taste.	

A solution containing a dram of potassium acetate to the pint of water is also given continuously by the rectum. The stomach is washed twice daily and the patient receives two colonic irrigations daily. A hot pack is given once a day. A pleasant alkaline drink consists of the following:

Cream of tartar	4 grams
Sodium citrate	2 grams
Sugar	2 grams
Water	ad 8 ounces
Lemon juice or orange juice to taste.	

The following, Fischer's solution, is given intravenously:

Sodium carbonate (crystallized) ..	10 grams
Sodium chloride	15 grams
Water	ad 1000 c. c.

At the beginning of the treatment the stomach is washed with the whites of three eggs and one quart of milk. Before the stomach tube is removed, three ounces of magnesium sulphate with six ounces of water are introduced and allowed to remain in the stomach. The patient

is then given a soapsuds enema. If the patient did not vomit after taking the poison and did not reach medical aid for at least three hours later, an intravenous injection of Fischer's solution is given at once. One thousand to 2,000 c. c. are introduced into the stomach. The patient receives eight glasses of imperial drink a day and large quantities of water. The urine is analyzed in order to control the treatment. The urine should be kept alkaline. It is tested with a saturated solution of methyl red in alcohol. If it cannot be made alkaline to methyl red the patient is in a dangerous state. Complications following this form of treatment are rare.

Treatment of Broncho-Pneumonia in Children.—Measham in his article in the *London (Eng.) Practitioner* says that broncho-pneumonia in small children is a condition which is all too frequently seen, both in general and hospital practice. Thus says the writer, in the seventh edition of his "Principles and Practice of Medicine," Osler states that "the death-rate in children under five has been variously estimated at from 30 to 50 per cent." Flemming, in his "Short Practice of Medicine," says "probably over 50 per cent. of patients under the age of three terminate 'fatally.'" This is a large death-rate, and any method of treatment which holds a prospect of reducing it is well worthy of consideration.

The method of treatment which I have adopted in seventeen cases is as follows: The child's chest is enveloped in a light Gamgee jacket, and over this a pair of woollen combinations are worn. The bed is placed in a part of the room free from draughts, and not more than the usual amount of bedclothes is used. A fire is kept constantly burning, and the window always open. The child is encouraged to take frequent sips of cold water. No medicines are given by the mouth, but a subcutaneous injection of quinine hydrochloride is given morning and evening. A solution is prepared in which one grain of the quinine salt is dissolved in ten minims of water, and the dosage is as follows:

For a child under six months....	Mv.
For a child under one year.....	Mx.
For a child under two years.....	Mxx.
For a child over two years.....	Mxx.

The treatment is simple to carry out, and the hypodermic method has obvious advantages in dealing with small patients.

A striking feature is the rapidity with which physical signs of the disease disappear, the patient often appearing in normal health ten days after the first injection. It is not claimed that the use of quinine hydrochloride in broncho-pneumonia in children is in any way original, but I have not seen it mentioned in any of the text-books, and it does not appear to be commonly used in general practice.

The series of cases, 17 only, is a small one, but I think it is large enough to show that

the treatment advocated is of undoubted use, and may allow us to take a more cheerful outlook in a disease which has hitherto been a source of grave anxiety.

Membranous Pericolicitis and Fusion of the Mesocolon and Mural Peritoneum.—According to Benjamin in the *St. Paul Med. Jour.* (Aug.), there has been more or less confusion in the minds of surgeons in relation to membranous pericolicitis. Some attach little or no importance to the membrane, which is frequently found constricting or enveloping one or more portions of the colon.

times, after leaving the stomach in a normal period of time, without a portion being deposited for an abnormally long period in any section or loop, the patient is usually free from gastro-intestinal disease. But when this is not the case and when it is determined by the fluoroscope that certain portions of the colon are found misplaced, kinked or bunched up, being inseparable or fixed, with some pain experienced in the effort to separate or detach these loops, it has been found at the operation that a membrane or excessive bands of peritoneum or fibrous tissues are responsible for the symptoms. Some of the most familiar pictures presented are of a deformed cecum and ascending colon, a short right section, a prolapsed hepatic



(Photo from Underwood & Underwood, N. Y.)

A NEW AMBULANCE BEING USED IN THE AMERICAN ARMY.

Each internist has practically ignored the subject, doubting even the existence of the disabling structure, until given the opportunity of witnessing a cure, by operation, of some pronounced and positive case.

So long as the profession is unfamiliar with the significance of membranous pericolicitis the treatment will be somewhat uncertain. A great many surgeons ignore the condition even now or content themselves with some simple treatment which seems indicated. The X-ray has assisted us very much in our efforts to determine the function of the alimentary canal especially of the colon.

When a Barium meal is found to pass on by and thru the successive coils of the intes-

flexure, a low dilated cecum or prolapsed and fixed transverse colon.

It is not necessary to operate upon all of the cases that complain of pain in the right iliac fossa or ascending colon. When there is not a pronounced stasis especially in young individuals the treatment should consist of proper diet, exercise, hygienic treatment, and if there be a colitis, irrigations are indicated.

When medical treatment does not result in relief operative treatment is indicated, especially should the X-ray pictures corroborate the other findings.

Surgeons of experience have decided, where constricting bands, whether of congenital or acquired origin, are present, they should be

divided sufficiently to overcome the constriction.

When a distinct narrowing is observed at the hepatic flexure and an unusual enlargement or dilatation of the cecum is found, the constricting tissue should be properly dealt with.

The author has yet to see a case where the symptoms enumerated were present and an X-ray picture revealed some of the appearances as stated, in which, at operations, there has not been found a crippling membrane which required attention.

Operation usually consists in separating the membrane in such a way as to leave little or no raw surfaces thereafter exposed, turning in all omental stumps. When the omentum is adherent to the abdominal wall Benjamin believes it must be separated in such a way as to leave the omentum fastened to the wall, bringing out the severed parietal portion through the peritoneal incision and there fixed in closing the abdomen.

After operation a carefully selected diet mostly vegetables, given at frequent intervals and colon irrigations are employed if there exists a colitis; supportive corsets are advised and physical exercises recommended.

In some instances of associated gastrocoloposis Benjamin has elected to suture the transverse colon and also the stomach to prevent the relapsing position of the colon, for a time at least until the muscle tone of the gut is restored, in this way the diseased and adherent portion of the bowels will not come in contact with the original site.

Surgical Treatment of Hernia in Children.—Ochsner (*Saint Paul Medical Journal*, May, 1917) states that over ninety per cent. of all hernias encountered by him in children less than twelve years of age healed spontaneously or under a nonsurgical treatment. The latter consisted in the prescription of a diet calculated to prevent abnormal intraabdominal pressure, overcoming all other causes of excessive pressure, such as constipation, phimosis, crying, and cough, and in keeping the child in bed with the foot of the bed elevated for at least fourteen hours each day. There are, however, certain definite and easily recognized classes of hernia in children which should be operated on, for sooner or later in these cases an operation will become necessary, at a time when its danger and inconvenience to the patient will be greater. All persons suffering from hernia in adult life who have had hernia during childhood are probably included in these classes, which comprise, 1, reducible strangulated hernia; 2, hernia complicated with hydrocele of the cord located in the inguinal canal; 3, hernia with omentum or intestine adherent to the sac; 4, hernia with congenital weakness of the tissues which normally should close the inguinal canal; 5, hernia with a tendency to strangulation but without a tendency to spontaneous healing; 6, hernia with cryptorchidism without tendency to spontaneous cure. All

these cases, constituting only about five per cent. of all hernias, require careful removal of the hernial sac and closure of the external wound. Classes 1, 3 and 5, are especially suited for the Anderson method. In Class 2, the hydrocele should be opened and everted. In Class 4 the Ferguson-Andrews-Bloodgood operation is indicated, and in Class 6 the Ferguson-Andrews-Bevan procedure.

Scabies.—In his interesting article in the *International Clinics* (June, 1917), Hartzell states that while scabies is a common condition it often goes unrecognized and still more often is imperfectly treated. Scabies and pediculosis are the only two itching diseases that may be "caught." Small family epidemics are of frequent occurrence.

Hartzell points out that the diagnosis is to be made from the fact that the disease is contagious and that it shows a predilection for certain regions.

In very young children the palms and soles are often affected. In adults the sides of the fingers, the flexures of the wrists, the anterior axillary folds, the breasts in women, and the shaft of the penis in men. An itching desire situated in these regions is almost certain to be scabies. Close examination will show a few small, dotted, sinuous lines or burrows which are absolutely pathognomonic of scabies.

Ten or twelve per cent. sulphuric ointment is an efficient remedy but is too irritating for infants and young children. Hartzell recommends for the latter, equal parts of styrax and olive oil, or one or two drams of balsam of Peru to the ounce of vaseline. Whichever remedy is employed it should be rubbed in from the neck to the end of the toes and fingers on three or four successive nights. This should be followed by a bath and then wait for three or four days to see whether the treatment has been successful and to avoid producing a dermatitis. If unsuccessful the treatment is repeated. All members of the family must be treated.

Erysipelas as a Complication of Mastoiditis.—Hays in *New York Medical Journal* (Aug. 18, 1917), reports that many theories as to the causation of erysipelas have been advanced, but as yet we are as much in the dark as ever as to its exact etiology.

The writer is firmly convinced that erysipelas cannot be considered either a contagious or directly infectious disease, his experience having been such as to lead him to believe that only patients who are particularly susceptible can contract the disease from others.

It has generally been understood that the reason erysipelas develops so often as a complication of mastoiditis is because the pus from the wound has a tendency to spread out on the surrounding skin and in this way infect it. Upon close observation, one will notice that in the majority of cases the erysipelas complication or infection occurs in front of the ear and not behind it. The organism that causes the

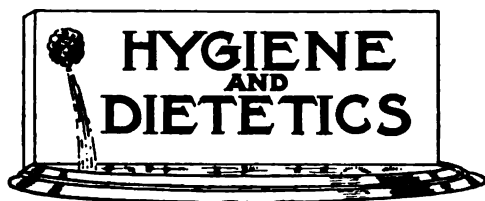
infection is believed by Hays to be present in the patient's hair and that the complication results many times from a lack of local resistance of the tissues in front of the ear. It is possible that Nature is using up so much energy in the building up of the mastoid wound that she takes away a great deal of resistance from the tissues in the neighborhood. It is likely that the anastomotic lymph channels are filled with fluid which goes toward the mastoid wound and thereby depletes the surrounding area. If this is true, one can understand why such an infection takes place away from the mastoid wound and not in it.

The mastoid wound should be dressed under strict asepsis and with the same care as usually used, and should be taken care of before the area of erysipelas is touched. The wound and ear canal should be cleaned out in the usual manner with particular precautions not to allow any of the instruments or dressing to touch any of the outside infected area.

Antiseptics in the wound are totally unnecessary and often harmful; they tend to diminish the resistance of the newly formed tissue. A wet dressing of aluminum acetate or boric acid solution is very soothing and does no harm. The most soothing application is a cold compress of a saturated solution of magnesium sulphate.

Hiss leucocyte extract which can now be obtained from leading drug houses is believed to be a specific for uncomplicated erysipelas, particularly when it is associated with ear diseases.

Another line of treatment which would be particularly applicable to the extreme cases of erysipelas with high temperatures, prolonged delirium, and the extension of the inflammation, consists of the direct injection into the gluteal muscles of the erysipelas patient of two or three ounces of citrated blood taken from a convalescent erysipelas patient.



Hygiene and Good Cheer.—In Proverbs it was declared by Solomon, a thousand years before the Christian era, that "a merry heart doeth good like a medicine but a broken spirit dryeth the bones." (Proverbs 17:22.)

Chester in his optimistic paper in the *Albany Med. Annals* (Oct., 1917) states that: "Cheerfulness which is one of the God-given qualities of a well ordered mind must therefore have its place and an important place in correcting disorders."

The physician is constantly in the presence of sickness and sorrow. He meets persons of all conditions of mind—the sad and the mel-

ancholy ones as well as those who are glad-some, bright and hopeful. He has many patients who are chronically out of sort. Neither he nor the patient can discern any organic trouble yet the patient easily imagines that he has all sorts of such troubles. If the physician tells him he has nothing the matter with him and to "cheer up" he will immediately suspect that his adviser is a failure at making a diagnosis and will at once dismiss him and try someone else.

With all the evidence we have to support the conclusion, it is not too much to say that cheerfulness in human kind has a salutary effect upon the system and is beneficial to health. Physicians as well as others generally recognize this. Laughter is one of the elements or at least one of the evidences of good cheer. Some unnamed poet or rather rhymster has truthfully said:

"Laughter! 'tis the poor man's plaster,
Covering up each said disaster.
Laughing, he forgets his troubles,
Which, tho real, seem but bubbles.
Laughter! 'tis a seal of Nature.
Laughter, whether loud or mute,
Tells the human kind from brute.
Laughter! 'tis hope's living voice,
Bidding us make a choice,
And to cull from thorny bowers,
Leaving thorns and taking flowers."

An old time philosopher advises us to "Laugh and grow fat."

An eminent physician in speaking of the physical benefits of laughter said many years ago: "There is not the remotest inlet of the minute blood vessels of the human body, that does not feel some wavelet from the convulsion occasioned by good hearty laughter. The blood circulates more readily at such times conveying a healthy invigoration to all the organs of the body, as it visits them on its particularly mystic journey. And thus it is that a good laugh tends to lengthen a man's life by conveying, as it does, a new and a distinct stimulus to the vital forces. On the other hand the habit of yielding to and fostering sadness of heart, embitters and shortens the days."

The statement that good cheer promotes good health has almost become axiomatic. It may be found asserted in one form or another by many writers.

The man is to be congratulated who not only believes that cheerfulness is conducive to health and that melancholy is destructive of it, but who has the constitutional habit of always looking upon the bright side of things, no matter how dark the other side may be.

Good cheer is like the chicken pox or the measles in one respect at least. It is contagious. May it become epidemic and may each of us have our part in spreading the germ.

The Importance of Diet in Anemia.—In the *Buffalo Med. Jour.* (June) Napoleon Boston gives the following:

1. To the ultra scientific physician the pathologic classification of anemia appeals most

strongly. To the practitioner the clinical classification is the far more significant.

2. I have employed numerous proportions of iron for many years, and am frank to admit that in the majority of cases, the results obtained are less favorable than those given by the use of other remedies. Foods rich in iron, that is available thru digestion, are preferable.

3. Whenever the cause of the anemia present can be ascertained the treatment is governed by such data. In those cases not the result of advancing cardiac, renal, hepatic disease, or carcinoma, excellent results follow the use of readily digested foods, meat juices; and special attention to the gastric intestinal tract.

4. A broth that I use in the treatment of anemia is as follows:

- (a) 1—One pound of ground lean beef.
- 2—Two quarts of water.
- 3—One raw potato ground or crushed.
- 4—One or two stalks of crushed celery.

Mix this together, and allow it to stand in a cool place for from eight to twelve hours.

(b) Place over the fire, and allow it to steep slowly until the volume of liquid approximates one quart.

(c) Strain thru a towel, and place on ice.

(d) Give the patient six to eight ounces of this broth three times per day, heating for each feeding, and seasoning to suit the patient's taste.

This together with the administration of red bone marrow proved to me in the treatment of sixty cases of anemia that the red blood corpuscles, and the hemoglobin were more rapidly increased by this method, together with the fact that the patients were always fed liberally of green fruit and vegetables, than by any other method I have yet employed.

Diet in Old Age.—With added years comes a decrease in strength with a corresponding increase in fatigue and lengthened periods of recuperation, says a writer in *The Nurse*. Therefore there is less physical exertion and a consequent lessened degree of waste and expenditure of energy. The salivary glands atrophy, the secretion of saliva is lessened, and there is atony and atrophy of the muscles of deglutition. Usually the muscular fibers of the stomach show atrophy, with consequent atony and dilatation. There is also atrophy of the gastric glands.

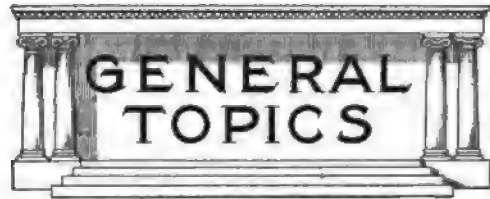
These changes mean that the individual does not demand so large a quantity of food as he did formerly, that it must be such as to require little salivary digestion, and that it must be of such consistence as to be easily swallowed. Owing to the condition of the stomach the period of digestion is much longer, the food remaining in that organ for five or six hours. This of course makes it inadvisable to eat oftener than every four or five hours.

Those elderly folk who are handicapped by the loss of natural teeth and who for one reason or another do not wear artificial ones, require food that is soft and easily masticated. Therefore meat, unless finely chopped or

scraped and thoroly cooked, should be omitted from the dietary. Even tho carefully prepared it should be partaken of sparingly. Poultry and the light meat of young animals should be given the preference when planning meals.

Calcium salts are not entirely eliminated in old age, the effect of potash salts is unfavorable, and lime elimination is also poor. The lime is retained in the blood and increases its viscosity and density, producing high blood-pressure and causing deposits and calcification in abnormal situations.

Thus it is important to select vegetables which do not contain those salts that are harmful to old and infirm tissues. Peas and beans are comparatively rich in potash salts and should not be included in the dietary. Rice contains only 1 per cent. of potash salts and therefore is to be recommended.



Alfalfa Luncheon Served to Kentucky Farmers.—Alfalfa was served to Kentucky farmers in the form of hot biscuits, doughnuts, cake and candy, at a luncheon during the recent annual farmers' week exhibition of the Agricultural College at the State University. The progressive young women of the domestic science department took care of the cookery and convinced their farmer guests that very palatable products may be obtained for the table from their alfalfa crops. The flour of alfalfa is of a creamy tint before cooking and a light green afterward, and while pea-green biscuits may not at first appeal to the average housewife, the flavor is regarded by many as rich and delicious. Food requirements may easily result in greatly increased use of alfalfa for flour in the near future. The recipes used in cooking it are about the same as those for wheat flour. Alfalfa candy is made from a glucose pressed from the stalk.—*Popular Mechanics*.

New Light on Nature and Origin of Cancers.—New and important data regarding the origin and growth of tumors and cancers have been secured by a scientist connected with the Department of Agriculture, who lectured on his investigation before the recent meeting of the National Academy of Sciences in Washington (*Popular Mechanics*). The author expressed the belief that there is a very close relation between crown gall, a plant disease, and cancer in animals and human beings, and that both are of parasitic origin, which, so far as cancer is concerned, is contrary to the present commonly accepted theory. During sixteen months of

study the investigator discovered a new type of crown-gall tumor which he has been able to produce at will by inoculating plants in particular places. This newer type corresponds to the most complex of malignant tumors in men and animals, he said. The scientist also believes that he has shown for the first time that tumors are due to chemical products of bacteria slowly liberated within the cells of the attacked plants.

Carbolic Acid Poisoning.—If a surface burned with phenol be washed at once with vinegar or a dilute solution of acetic acid, the bleaching and anesthetic influence of the acid are such as to at once control the pain. The chemical influence of the two is such that the caustic influence of the phenic acid is destroyed by neutralization. Taken into the mouth, the carbolic acid influence will disappear quickly if it be followed at once by a mouthful of vinegar retained in contact with the surfaces burned by the phenol.—*Ellingwood's Therapeutist*.

Another Consolidation of Journals.—At about the time that the *Medical Review of Reviews* was founded, Professor Dillon Brown, of New York, established a semi-monthly journal devoted to the diseases of children, called *Pediatrics*. The opening article was by A. Jacobi and the leading physicians of the city, among them, J. Lewis Smith, Reginald H. Sayre and William H. Park contributed to its pages. Latterly it has been edited by William Edward Fitch, but Dr. Fitch has recently been appointed a Major in the United States Army, and we have acquired his blue-pencil and subscription list.

Pediatrics will no longer appear as a separate publication, but has been incorporated with the *Medical Review of Reviews*. Beginning with January, however, the *Medical Review of Reviews* will contain a special department devoted to *Pediatrics*. This feature is but one of the improvements scheduled for the coming year. Important Symposia are now in progress, the editor will contribute a second series of Pathfinders in Medicine, a Staff of Associate Editors is being formed, and thus the *Medical Review of Reviews*, in entering upon its twenty-fourth annual volume, promises to be more serviceable to the profession than ever before.

Public Health and the Disposal of the Dead.—Forbes in an interesting article in *Medical Officer* (Sept. 1, 1917), discusses infection and how it may be guarded against. First and most obviously by wearing post mortem gloves, thus giving the operator a double skin; or by dipping the hands frequently into antiseptic fluid such as biniodide of mercury, in a dilution of 1 in 2,000.

In cases of septic disease, septicemia, puerperal fever, pneumonia, erysipelas, septic wounds and acute abscesses, the operator should

carefully protect the hands with rubber gloves.

The infection is carried not by emanation from the body but by actual contact with the fluids of the body, these fluids entering the operator thru a needle prick, thru skin abrasions or thru the mucous membranes of the mouth and nose.

There is nothing to fear from plague patients inasmuch as they have relatively few organisms in their blood. In this country the patient usually dies in a hospital and therefore is not flea infested.

Anthrax is one of the few diseases in which the infecting organism does not die soon after the death of the patient. Smallpox provides us with an infection which does not tend to die quickly with the death of the body. The infection may live on for years in the scab. Undertakers who handle such bodies should have been vaccinated successfully within two years prior to handling the bodies; then they are perfectly safe from smallpox infection.

In scarlet fever the organism probably dies quickly. What to be careful of, as also in diphtheria are the discharges from nose, mouth and ear. It is not believed that the peeling skin in scarlet fever is not dangerous.

Are Moving Pictures Injurious to the Eyes?—In summarizing his article Bohn in *New Orleans Med. and Surg. Jour.* (Oct., 1917) reaches the following conclusions:

1. Moving pictures under favorable conditions do not cause as much fatigue as the same period of concentrated reading.
2. Under unfavorable conditions, moving pictures cause increased fatigue which, if continued, produces symptoms that are unpleasant and may be harmful.
3. Most persons who complain that moving pictures cause ocular discomfort have some ocular defect.
4. Moving pictures, under favorable conditions, act as a slight test of distant eye endurance. A person with no defect of the sight mechanism should be able to enjoy at least four sittings of one and a half hours each per week with no discomfort.
5. By staring fixedly at one object on the picture for a prolonged time, fatigue is greatly increased and unpleasant symptoms are produced. A person should not stare at any one object, but should try to look at different parts of the screen, and should either close the eyes or look about the theatre for a few seconds about every five minutes.
6. Every person has an individual standard of eye endurance. When your eyes become fatigued in a picture theatre, leave.
7. A review of the literature to date records no permanent harm to the eyes from moving pictures. The fact that ten million persons enjoy moving pictures daily with no definite reports of specific harm or injurious effect, and with but few complaints of slight inconvenience, proves that moving pictures, as presented at the average theatre, can have no injurious effect upon the eyes.

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In Advance

The Gas Attack in Modern Warfare.—

The degree to which chemistry has entered into modern warfare is indicated by the use of poisonous gases. The Hague Convention prohibited the use of this infernal instrument, but, nevertheless, it has become a weapon of offense and defense horrible beyond description.

According to the *Journal of Laboratory and Clinical Medicine*, October, 1917, the toxic gases at present employed include hydrocyanic acid, arsenide of hydrogen, hydrogen sulphide and hydrogen phosphide, which are directly and immediately poisonous. A second group includes chlorine, carbon oxychloride, known as phosgene, and various other substances whose effects are to produce death by asphyxiation. A third class is not actually poisonous, but serves to cause the victims to retire from action because of intense lachrymation. Among these agents may be mentioned chloracetone, bromacetone and iodacetone.

A knowledge of the chemistry and physics of gases is essential for their successful employment. Whether used in waves, in hand grenades, or in shells, climatic conditions and their physical nature determine their effectiveness. The wind must be moderate and blowing towards the enemies' lines at a rate of approximately thirteen miles an hour. A humidity of 40 to 60 per cent. adds to the certainty of a successful attack.

To recognize the approach of a chlorine gas wave, strips of blue litmus paper are placed in front of the trenches; a change of their color to red gives the signal of the approach of chlorine.

Efforts at counteracting the malign effects of a gas wave collectively have not achieved satisfactory results and dependence is therefore placed upon the individual gas mask.

The forms, shapes and devices thus far utilized in the manufacture of gas masks vary among the different armies, but the underlying principle is the same. Layers of gauze cover the mouth and nose, after having been impregnated with a neutralizing solution consisting of water, hyposulphite of soda and carbonate of soda. The protection thus afforded lasts for four hours when the gas is diluted to one in one thousand. The mask lacks protective value against carbon monoxide.

The use of liquid fire, incandescent gasoline or flaming phosphorus, is so deadly that protection along ordinary lines is without result.

It is a sad commentary upon the diabolic instrumentalities of war that the chemical industry, which has been of such constructive value in advancing human welfare, should become transformed into a hideous messenger of death against which chemistry itself is but a weak defender.

The training which medical men are undergoing in order to familiarize themselves with the action of poisonous gases and the methods of treating those who have suffered from the fumes, has not held any line of treatment that is fraught with certainty or hope. The initial irritations of the bronchial tract and the profound alterations of the circulatory system are scarcely amenable to specific treatment, and dependence must be placed upon symptomatic therapeutics.

The use of poisonous gases is not to be condoned by saying "this is war." The rights of combatants have always received some degree of consideration in order to preserve the semblance of humanity in war's glorious art. Cruelty, hate, venom and hellish activities have been liberated in spite of the Hague Convention. Some of the triumphs of chemistry in warfare represent the defeat of civilization. The gas attack is but another unfortunate perversion of the potentially beneficent function of chemical science.

Public Health Expansion.—The extent to which the public health movement has grown was well demonstrated in the war program of the American Public Health Association in October. The field of inquiry and investigation has been broadened so extensively that it is difficult to keep pace with the various sub-divisions of public health work in which specialists are being developed.

While tuberculosis, venereal diseases, personal hygiene and army sanitation occupied an important part in the program, the attention which was given to mental diseases, social insurance, public health edu-

cation and publicity methods indicated that the social phases of the public health movement have come to the fore with unusual rapidity and activity.

The study of rural health administration, food and drug control, industrial hygiene and community sanitation received a measure of discussion larger than that devoted to the problems of munitions industries. The questions of factory illumination, the prevention of caisson disease, heating and ventilating standards, were found to be competing with papers considering the replacement of men by women in war industries, industrial fatigue and the comparative value of Dakin's solution and tincture of iodine. Examination of milk and water, studies of tetanus bacilli, typhoid and paratyphoid bacilli and gas bacilli were topics invested with greater significance as related to war conditions than when regarded as factors in mortality and morbidity during times of peace. Syphilis, dysentery, meningitis, malaria and pneumonia assumed a new and more belligerent and challenging attitude in the light of the hazards to a greater military force than this country has ever known or contemplated. For the same reason, problems of sewage disposal, drainage and housing attracted more attention than usual.

The field of vital statistics was covered in relation to the records and reports of the army and navy, and plans were discussed for insuring better morbidity statistics of war industries, as well as in hospitals, penal institutions and other places where statistical methods have not been pursued in the accumulation of facts relating to the health, disease and death of human beings, who are under care for social, economic, or public health reasons.

Nutritional problems and sanitary prob-

lems relating to cold storage, canning, food conservation and distribution widened the general knowledge of the food and drug situation and directed specific attention to the phases most intimately involved in the preservation of the public health during a period of war.

When one contemplates the number of selected topics with which a health officer must be familiar, one is not astonished that education for public health service is gradually branching off from medicine to become a new highly technical branch of public service. The time has passed when any man, who has successfully attained a license to practice medicine, is to be deemed capable of exercising the functions of a health officer. There is every reason to believe that this highly developed specialty will gradually find itself in the hands of persons who have pursued a course of training entitling them to the degree of Doctor of Public Health.

Will the future health officer necessarily be a graduate in medicine?—In all probabilities the Doctor of Medicine, who has undergone post-graduate education in sanitary science, statistical method and various other subjects useful in public health work, will represent the highest type of health officer. There is no reason to believe, however, that the degree, Doctor of Medicine, will be a *sine qua non* for those aspiring to the degree, Doctor of Public Health. There is a border line between engineering and medicine which suggests that future health administrators may be developed from the technical schools of engineering quite as successfully as from the schools of medicine.

Regardless of which type of student ultimately enters into public health service, it is

imperative that due recognition be given to the constantly growing work covered in public health administration. Universities must make adequate provision to meet these needs thru post-graduate courses which will enable interested and ambitious students to prepare themselves for careers of usefulness in public health. Unit courses are exceedingly desirable to enable aspiring individuals to increase their efficiency along definite lines of activity or to improve their technic in various types of laboratory work, so essential to the study of epidemics or other public health questions.

The number of public health administrators is limited, but the number of persons who may be engaged in public health work is far beyond the present supply. War itself will increase the burdens of responsibilities of the worker in preventive medicine, for such is essentially the main function of the modern health administrator.

The public health movement now embraces portions of the field heretofore claimed by sociology, economics, education, engineering, bacteriology and medicine. Preparation for public health service is no longer a simple matter of an appointment or an election to office. Study, application, investigation, research and apprenticeship form necessary phases in the preparation for conscientious, efficient, scientific health work.

Reclamation of the Physically Exempted.—The experience of Local Exemption Boards, in connection with the national draft, has demonstrated a degree of unfitness of a large part of the male population for military service. The results of physical examinations indicate that a large

number of these men have been rejected for causes which must interfere with their general usefulness in civil and industrial life as much as they would in the army. Defects of vision, impaired hearing, diseased tonsils decrease the potential serviceability of everyone. Cardiac diseases with decompensation, pulmonary tuberculosis, syphilis, deformities following fractures and burns, hernia, amputations and various neuroses are sources of devitalizing influences which hamper the full expression of human life and activity.

At this time, when the physical value of a man is receiving unusual attention and thought, it is a matter of national concern to determine upon a course of action that may possibly reclaim for useful service the recruit who has been rejected or exempted because of physical disability. To complacently and passively note the lowered efficiency of twenty per cent. to forty per cent. of potential recruits constitutes a grave error on the part of all those interested in national betterment. It is imperative that some positive program of reclamation be established in order to conserve and improve the vital resources of our young men.

In connection with the military development of this country to a point of maximum efficiency, there are innumerable positions which might be filled by men who have been rejected as unfit for military service. The tuberculous man, it is true, is not a desirable candidate for Government employment, but there are numerous opportunities for employing men whose disqualifying defect is bad teeth, enlarged tonsils, hemorrhoids, hernia, syphilis, flat feet, substandard height or underweight. If attention were to be given, at the present time, to the curing of the men thus rejected,

i. e., to the relief or removal of the defects which interfere with their truly military employment, a large number of men would be restored to a condition more nearly approaching fitness, and would then be available either for a future draft or for occupation behind the line of active military service in fields of work essential for military efficiency.

There exists a national opportunity for an intelligent effort to raise the physical standards of every community and drive home in a direct and vital manner the importance of physical soundness and the means whereby it may be attained.

While psychologists are busily engaged in testing out the characteristics of soldiers, with a view to determining their particular availability for definite fields of effort, the medical and surgical fraternity might well occupy itself in the constructive work of giving the necessary attention to those who have been declared unfit by the local boards responsible for the selective draft. Undoubtedly the advantage of reclaiming the thousands who have been disqualified must appeal to those interested in national health. There may be difficulties in working out a plan to meet this particular problem of reclamation, but, if the Government recognizes the importance and value of organized efforts in this direction, the problem will be attacked with earnestness and enthusiasm and a satisfactory plan will be evolved. Projected schemes for re-educating the disabled soldiers are receiving merited, careful consideration, but it would be equally valuable to the Government to plan, in connection therewith, a system for restoring those who are disqualified for military service by conditions which are remediable.

Protecting Health Appropriations.—

At a meeting before the State and Provincial Boards of Health in Washington, Dr. Rucker of the United States Public Hospital Service, stated: "It is a basic fact that the cornerstone upon which the winning of the war depends—is health." The obvious truthfulness of the statement cannot be overlooked, despite the appearance of evidences of neglect of numerous health matters.

The interrelation between the health of the civil and military bodies creates numerous questions, the answering of which must be begun before serious difficulties arise demanding prompt and immediate attention. The various health agencies of the country are confronted with large problems which will require unusual care and attention in order that public health be maintained at a high level, and that epidemics do not develop as a result of indifference or neglect.

The success of our military forces depends upon the maintenance of a high standard of health among the civil population so that the necessities of war may be provided in abundance to meet every demand of the fighting forces. It is no idle saying that patriotism involves the continued health of the civil and industrial workers. Under the conditions of modern warfare every individual is a factor in determining national efficiency and the needless sacrifice of lives or limbs is contrary to every dictate of patriotic endeavor.

Under the pressure of high prices, war taxes, industrial adjustments and the unsettled conditions growing out of the transformation of the country from peace to a war basis, there is a tendency to effect numerous forms of economy. It is unwise and contrary to a rational public health

policy to attempt to curtail the expenditures which are necessary for benefiting the health of communities. Decrease in appropriations for the defense of states and cities should not be permitted. There must be support of the budget allowances for the defense of the health of citizens. A systematic scheme for developing or fostering physical, mental and moral improvement of the population may properly be regarded as a legitimate reason for spending even larger sums of money than have been available in the past. The strains and stresses incident to war throw added burdens upon the populace and involve abnormal conditions which may be accompanied with dire results unless health authorities, official and private, continue their work and bring to bear even a larger measure of resourcefulness in combating existing or developing evils.

The decrease in physicians available for the civil population adds weight to the importance of raising the health standards of the community to a higher plane than has ever existed in this country. The need for physically sound and efficient human beings has never been so urgent as at the present time. While wise plans have been devised for rehabilitating maimed soldiers and the problems of military medicine have assumed unusual proportions, there is an equally imperative call for the organization of resources for the benefit of that vast army at home, upon whose health depends the safety of our forces in the United States and in belligerent countries.

It should be sufficient to call attention to the value of personal hygiene and the benefits which may accrue thru a wider educational propaganda for its improvement. From infancy to old age every effort

must be made to preserve and save human life. War itself accentuates the necessity for throwing a larger number of safeguards around the population in order that the ravages of military occupation or preoccupation may not be visited upon the technically noncombatants, who after all, must fight the hardest battles during this war.

Milk Prices.—The problem of an adequate supply of safe milk for the children of the country has become serious. A clash between sanitation and prices is impending.

The amount of milk now exported necessarily creates a distinct shortage in the American market and tends to restrict the amount available for home consumption. For the three year period before the war, the annual average export of condensed milk was approximately 18,000,000 pounds as against 260,000,000 pounds for the fiscal year ending June 30, 1917. For the same periods the cheese exports amounted to 3,700,000 pounds and 66,000,000 pounds. Butter exports increased from 4,500,000 pounds to 27,000,000 pounds. In addition to these increasing exports, there has been a marked increase in the costs of fodder and labor and the various other elements entering into milk production. Sanitation has added a legitimate additional cost for the protection of the consumer.

It must also be borne in mind that the total number of cattle in the world has already decreased by more than 28,000,000 head. In England, France and Germany the herds are being deliberately sacrificed to supply the immediate necessity for meat. It is natural that this slaughtering of dairy cattle will increase as the war continues, and the responsibility of supplying Europe with

milk products will seriously involve an increase in the productivity of dairymen in the United States.

The consumer at home is faced with the difficulty of an increased milk shortage on the one hand, and higher prices on the other. While it is undesirable to let down the hygienic standards, it is necessary to realize that a lowered standard of milk is productive of less harm than a marked decrease in the consumption of milk by the children of the country. More attention must be paid to the sterilization of milk in the home, if the additional expense of pasteurization is eliminated from the cost of production, in order to cause milk prices to fall to a plane more easily reached by the pocketbooks of those to whom the use of milk is an absolute necessity.

The conservation of foodstuffs and the re-education of the palate to meet the demands of food conservers, cannot be effectively secured without making adequate provision for placing the necessities of life within the grasp of the ever lowered purchasing power of the common dollar. The system of state subsidies, so widely practiced in England, may become necessary to enable the earner of small wages to secure a sufficient amount of nourishment to maintain a reasonable standard of healthful living. Every effort must be made to increase milk production, but at the same time every effort must be devoted to keeping the prices down so that milk does not become a luxury, the purchase of which is accompanied by serious shortages in other types of foods necessary for maintaining the health of the community. Excess profits on milk must be controlled by vigorous regulations.

The health of infants and children is of paramount importance and the relation of

nutrition to infant mortality is thoroly understood. High milk prices are bound to cause an increased mortality rate just as surely as would the removal of many of the sanitary regulations for the protection of the milk supply. The general public will find that the home sterilization of milk is an effective means of combating the danger of milk-borne disease. Milk must not be curtailed in the family dietary nor should high prices be accepted without a protest. America has much to learn from foreign countries about methods of regulating food prices and food distribution.

The Prevention of Rickets.—The prevalence of rickets, among negroes and Italians, has generally been attributed to racial susceptibility. Experiments by Hess and Unger, *Journal of American Medical Association*, November 10, 1917, demonstrate conclusively that, so far as the colored race is concerned, the development of rickets is based upon some dietetic insufficiency which appears to be satisfied by the administration of cod-liver oil.

Inasmuch as the economic status of the negro population is distinctly bad and the degree of education is notably inferior, it is natural that the infant mortality rate should be far higher for the black race than for the white. If, however, groups similar, economically and educationally, were selected among the blacks and whites the difference would probably be far less than is evident in the infant mortality rate for 1916 of 193.3 for New York City negro infants as against 91.2 for the white babies.

Cod-liver oil has been recognized as a most valuable therapeutic agent in the

treatment of rickets. Because rickets is a predisposing cause of respiratory diseases such as pneumonia, bronchitis and possibly whooping cough and tuberculosis, the successful prevention of rickets among infants would tend to reduce infant mortality and build up stronger children, with a greater resistance to disease and with stronger constitutions to withstand the effects of contagious diseases. According to Hess and Unger the administration of cod-liver oil for prophylactic purposes is a measure which manifestly merits further investigation. According to their experience, cod-liver oil should be administered for six months as a minimum period with an average dosage of one-half teaspoonful of the oil three times daily to infants under six months of age. The dose for children above six months is one teaspoonful three times a day. Under this treatment of forty-nine children, only eight developed rickets, while of sixteen children used as controls, and to whom cod-liver oil was not given, fifteen became rachitic.

The development of rachitis apparently depends upon the lack of some particular vitamine which is supplied by the animal oil, but is not to be found in olive oil since this does not prevent the occurrence of the disease. The fact that breast-fed children fall victims to this deficiency disease suggests that, possibly, the dietary of the mother lacks a certain required protective substance as, for example, is the case among nursing mothers in the Philippines whose children develop beriberi.

Cows' milk itself does not seem to supply the deficiency, because children carefully fed on cows' milk frequently exhibit manifestations of the disease, tho possibly not as severely as those found among infants who

are brought up on inferior grades of condensed milk or certain baby foods consisting principally of carbohydrates.

If further investigation should demonstrate the prophylactic value of cod-liver oil in preventing scurvy, steps should be taken to provide opportunities for the distribution of cod-liver oil at cost, or at public expense, to those unable to afford it in those sections of the country, the infant population of which is most susceptible to rickets. The precedent for a measure of this character, exists in the supplying of quinine for the prevention of malaria or the dispensing of thymol or oil of chenopodium for the relief of hookworm.

The widespread organization of infant welfare stations furnishes a natural center for the dissemination of knowledge concerning infant welfare; and these health centers should be utilized for attacking the problems of rickets along preventive lines. The splendid efforts which are being made to educate mothers in the care of their children involve training them to observe the earliest evidences of disease and to realize the importance of prompt attention to such symptoms in order to control the advance of the disease. It is a short step from the acceptance of the value of cod-liver oil, as a prophylactic, to educating mothers to the need and methods of administering it to their infants.

It is to be hoped that cod-liver oil will prove itself to be as effective in preventing rickets as orange juice is in inhibiting the appearance of scurvy. Too great dependence, however, must not be placed upon cod-liver oil as a means of attacking the infant mortality rate among negro children. The relation of ignorance and poverty and the concomitant inadequacies of the maternal and infantile dietary will continue to

challenge the attention of those striving to reduce the infant mortality rate of the negro population.

Attacking Venereal Diseases.—The condition of France with reference to venereal and tuberculous infection is exceedingly serious. Of the two diseases, there are probably more of venereal origin than are to be found due to tubercle bacilli. The organization of our large army creates a similar problem of paramount importance.

At the last meeting of the American Public Health Association, Colonel F. F. Russell presented the figures for admissions for venereal disease covering the first four weeks of the existence of the National Army. A glance at his statistics reveals the necessity for exceedingly active efforts on the part of the Government to protect, not merely the soldiery, but the civil population against the havoc which lies in the wake of venereal disease. The admission rates for each of the four weeks for the Regular Army were respectively 85, 80, 85, 53. The admissions for the National Guard during the same period were 144, 149, 156, 106. The new National Army, which represents in a measure the rate in the civil population from which recruits were drafted, gave rates of 193, 387, 276, 205.

The rate in the Regular Army undoubtedly shows the advantage of prophylactic measures plus the moral force resulting from confinement or deprivation of pay imposed for such disabilities not acquired in the direct line of duty. The high rate in the National Army is probably due to "letting down the bars," and accepting men venereally infected, with the idea of curing them

while they are in the service. Concerning the wisdom of accepting infected soldiers much might be said, but this would not alter in the slightest the facts which now confront the medical officers in the military service.

The Commission on Training Camp Activities, under the Chairmanship of Raymond D. Fosdick, is seeking to attack this huge problem along most rational lines. Training coaches, singing coaches, theaters, educational courses and sane activities are being made available for all soldiers in the attempt to compete against the problems of alcohol and prostitution.

The second line of attack is to secure the cooperation of municipalities near cantonments with a view to eliminating restricted areas in all cities within a wide radius of the congregating centers of military organization. This activity, on the part of the War Department, represents a new departure and the results thus far indicate a willingness on the part of municipal officers to work with the War Department in safeguarding the environment of soldiers so as to lessen the likelihood of their infection.

The third method of attacking this tremendous problem lies in the institution and encouragement of prophylactic treatment, and the determination thru Wassermann tests of those who are already infected with syphilis.

A most valuable step in advance lies in the formulation of a plan which involves the assistance of the French Government so that the soldiers "Over there" will be similarly protected by the extension of the elaborate plans of organization now being provided for troops in this country.

When it is realized that venereal diseases are first in the order of importance of conditions involving loss of service, it is easy

to appreciate the potential merit of organized and systematic attack upon them. The judicious admixture of sanitation, hygiene, education, ethics and recreation, together with the efforts of local authorities to banish the red light districts, should result in much benefit to the health and efficiency of the troops destined to participate in the world's struggle.

It is notoriously difficult to alter human nature or to change habits of living which are backed up by established customs. But, nevertheless, the difference in the admission rate between the Regular Army and the National Army leads to the expectation that the venereal diseases will be materially decreased as the efficiency of military discipline and control increases.

As the entire Nation is regarded as participating in the present war, so, too, must all sections of the country be arrayed against the most vicious foe of civil and military life—the venereal diseases.

A Vicious Slander.—The general belief that the quartering of soldiers in a community is invariably followed by an increase of immorality in that locality may be justified by conditions that have existed in the past. It has long been common knowledge that the social evil has reached serious proportions in the environs surrounding certain army posts. In many respects this is not surprising. The massing in a given section of a large body of young, virile men, deprived of the ties and restraining influences of home life, necessarily presents problems which need not be discussed in detail, but which cannot fail to be appreciated by every student of human nature. The attraction of vicious individuals of both sexes,

but especially the female, is to be expected. The effect of these various forces and conditions has been very naturally an increase of immorality and its consequences.

To be sure, the higher military command and the local authorities have fought against these evil conditions, and in the majority of instances the results have been directly proportionate to their zeal. In spite, however, of the most vigorous efforts and the strictest regulations, it has been impossible to prevent a certain amount of immorality, and given the fundamental condition of a concentration of a large number of young unmarried men, it will never be otherwise.

With the mobilization of our National Army, and the establishment of sixteen great encampments, in each of which thousands of young men will be concentrated, there has arisen a lively fear on the part of many good people that a carnival of immorality would follow as an inevitable sequence. But no such fears need be entertained. Many factors are present to operate against any such result. With few exceptions the National Army will be made up of young men who come immediately from positions in civil life which have entailed more or less close observance of social restrictions. The soldier's life to them is an incident, a temporary occupation undertaken for a definite purpose, and they intend to leave it as soon as that purpose is accomplished. In other words, they intend to return to civil life, with its obligations, its aims, and its responsibilities, at the earliest possible opportunity. The conditions under which they became soldiers, and the associations connected with their military duties serve to keep them in close touch with their former life, and all it means. They know that these same conditions likewise serve to keep the public more vitally con-

cerned with their welfare and conduct. There is none of the old time tendency to stigmatize the boys of the National Army because they are soldiers, a custom not uncommon in the past. The people look on them as "our boys"—they are "your son" and "my son"—and are no more disposed to anticipate any moral lapse now that they are active defenders of their country, than was formerly the case when they were following civilian pursuits. These young men in turn do not feel that their military duties set them apart from their former life, or place them in any different relation to their former habits of living.

Finally, there is a certain exaltation connected with their military work and the fact that they are "doing their bit," to use a well-known expression, that gives them a new and increased sense of responsibility, and creates a real desire to be a credit to their country and those who are interested in them.

These and many other factors combine to preserve the moral tone of the men who constitute our American armies. Without question, there is less immorality or vice to be found in and around the various encampments, where our boys are being made into the finest soldiers in the world, than any one familiar with the conditions, peculiar to army mobilization the world over, would believe to be possible.

All of which brings us to the recent attack on the moral conditions at Camp Upton, in which a woman reform-worker made the statement that six hundred young girls at, or adjacent to the camp, were about to become mothers, and seven young women had died, ostensibly as the result of illegal operations. This woman, whose position and previous public work endowed her words with particular importance, showed

a lack of responsibility and judgment that was shocking, especially to those who are appreciative of her former endeavors, and have credited her with intelligence and conservatism. Careful investigation has shown that the above statements were made without adequate evidence or giving proper thought to the consequences liable to result from hasty and untrue accusations of such a character. Apparently no thought was given to the fact that the first soldiers came to this camp less than three months ago, or that the nearest town or settlement was several miles away. A little prudent investigation, on the part of the woman referred to, would have given her much information that could not have failed to convince her of the wild improbability, if not impossibility, of the conditions she mentioned being blamable to the soldiers of Camp Upton. To a woman of her intelligence the fact that no soldiers had been at the camp longer than two and a half months should have been significant, for ordinary common sense should have told her the difficulties of determining pregnancy in six hundred young girls—presumably all primiparae—at two and a half months of gestation!

A certain amount of immorality may have existed around the camp. For sometime before the soldiers reached there, a large body of workmen had been engaged in putting up buildings, and preparing the grounds. Subject to no particular discipline, these men were doubtless very apt to resort to all manner of vicious practices.

No criticism can be directed against honest exposure of such conditions as may have existed, or any earnest effort to correct them. Particularly should sympathetic support be given to any attempt to save the young and unsophisticated women who may be drawn into the whirlpool of vice and de-

pravity created by the conditions just described. God knows there is need of such work, and no decent person will offer a single objection to its prosecution.

But this is something very different from hasty, sensational and ill-founded attacks on the young men who are about to offer their lives for their country. To accuse them of the wholesale seduction of young girls, without absolutely incontrovertible evidence, is not only dastardly and mean, but *playing directly into the hands of the Nation's enemies*. For a long time, enemy propagandists have been sedulously trying to alarm parents and relatives by exaggerating the dangers of military life, and there is no way in which those closely interested in the welfare of our young soldiers can be caused greater agitation and anxiety than by the spread of fictitious tales of camp immorality.

If the woman who has been responsible for this monstrous calumny against thousands of young men who are ready to make the supreme sacrifice for their country, is as sincere and honest as she is said to be, she will rectify her hasty and absolutely unfounded accusation in a frank, above board way without delay. If she does not, all her future work will suffer from the suspicion of being colored by hysteria and inaccuracy—and be discounted accordingly.

Manipulative Surgery.—It is allowed generally that a man may be preeminently endowed with high manipulative skill and yet not be a great surgeon. Such skill to a large extent is innate, and cannot be taught, altho it can be much more highly developed by assiduous practice, and by instruction in the correct methods of procedure. An ac-

curate knowledge of anatomy and physiology, if not absolutely necessary to the highest development of manipulative technique, is, at least, a very valuable addition. Thus the dictum may be laid down that while a man does not possess manipulative skill, merely because he has a surgeon's qualification, yet the knowledge of surgery, anatomy and so on which the possession of a diploma implies, is a distinct aid in his surgical work.

In Great Britain, for some time, a storm has centered around a Mr. H. A. Barker, who is admittedly a clever exponent of manipulative surgery. Since the war this storm has reached its height.

It is said that Mr. Barker has had great success in the treatment of joint troubles, displacements of the semilunar cartilages of the knee joint, flat foot and of various other joint disorders. He has apparently won a high reputation in this line of treatment, so much so that it is felt by many in Great Britain that his skill should be placed at the disposal of the numerous soldiers who have received joint injuries. Mr. Barker has offered his services to the British Army Medical Council, but the Council has not thought fit to avail itself of them. Further, the question has been brought into the English Parliament and after a lengthy debate, a negative answer was given by the Under Secretary of State, who refused on the plea that the Government could not assume responsibility in cases where wounded soldiers go to "an unqualified man" for treatment; if they go to him they must do so on their own responsibility.

There are obviously two sides to this question. Mr. Barker and his adherents contend that surgeons cannot do the work he does, for the reason that their training has

not given them the knowledge of the manipulative methods used by him. There is little doubt, indeed, that his skill is considerable and from this point of view, it appears unfortunate that the British authorities will not authorize the use of his methods. On the other hand, by admitting Mr. Barker to the privileges of the medical profession, the thin edge of the wedge of quackery may be allowed to enter. If one unqualified man is permitted to practice surgery, there is no reason why all such should not be allowed to do likewise. If the bars are let down for one, there is danger that they will be let down for all, which would not only be manifestly unfair to members of the profession who have spent time and money in gaining their qualifications, but in the majority of cases would be essentially dangerous and harmful to the general public. It must be borne in mind that Mr. Barker stands alone as a manipulator of joints. Perhaps, if his services are indispensable, there may be some way in which they can be utilized, but at the same time, it is highly desirable to maintain the principle established for the protection of the public—not the medical profession, as so many seem to think—that no one should be allowed to practice medicine or surgery who has not duly qualified by examination and clinical experience, and received a certificate testifying thereto.

In the last analysis, it should be remembered that while much good might be done by Mr. Barker, the possible harm apt to accrue from creating a dangerous precedent, to say nothing of the injustice to qualified physicians and surgeons, who have cheerfully met every requirement of the law, may lead to consequences which will far overbalance the total good.

Finally, it remains to be proven that Mr.

Barker possesses skill and ability that cannot be duplicated—and even surpassed—by qualified medical men if given equal opportunity for applying their talents under surroundings as spectacular and sensational.

Charity in Wolves' Clothing.—A scandal of a particularly mean nature has occurred in connection with a so-called charitable undertaking in aid of our soldiers and sailors. An Army and Navy Bazaar was arranged with the object that the profits therefrom should be devoted to buying what are known as "comfort kits" for American soldiers and sailors. A committee was formed and the Bazaar was widely heralded. The arrangements were on a pretentious scale and its opening was proclaimed with a great flare of trumpets. In fact, no effort was spared to make it appear that it was a charitable affair pure and simple, and that by paying for entrance and by buying the goods offered for sale, soldiers and sailors alone would be benefited. The Bazaar has turned out a complete fiasco; indeed, from accounts which have come in so far, it seems to have been little less than a swindle. According to the lay journals the gross income of the bazaar from all sources was \$71,475. The net profit for the United States Army and Navy Comfort Committee was \$754, or only about one per cent. of the receipts. That is to say, all of the profits, with the exception of \$754, were swallowed up by the expenses of promotion. The real beneficiaries were not soldiers or sailors, but the promoters. It would be idle and superfluous to enter into details of the unsavory proceedings, and it will be sufficient to say either that the conception of the Bazaar appears to have arisen

in the brains of a few men with the deliberate intention of making money for themselves, or that it was so carelessly managed that opportunity was given for "pouching the profits."

In any event, the whole affair is most unfortunate. Under the guise of patriotism and charity the generous public has been mulcted of its money, and moreover, which is worse by far, robbed of much of its enthusiasm for the cause, as well as its faith in human nature and straight dealing. People will henceforth be more chary of giving to similar enterprises, because they will now fear that their gifts may never reach their intended destination or serve their avowed purpose. In these days, purse strings are loosened easily and it is a dastardly outrage to impose on the charitable instincts and patriotism of the willing giver, in the manner in which the promoters of the Army and Navy Bazaar appear to have done. However, it frequently happens that out of evil good may come, and from the Bazaar denouement it appears likely that drastic steps will be taken to prevent the recurrence of any such flagrant and despicable abuse of obtaining money under false pretenses in the holy name of charity.

It is gratifying to know that the District Attorney is directing an investigation into the scandal and there is reason to anticipate that steps will soon be taken to place future charities under state or municipal supervision.

A Law that Stultifies the Medical Profession.—Elsewhere in this issue (page 775) is a letter which we gladly reproduce from the *New York State Journal of Medicine* because of its manifest importance to every New York physician. We yield to no

one a more earnest desire to see the drug evil curbed and conquered, but we cannot condemn strongly enough the illogical, unfair and altogether pernicious law recently passed with the ostensible object of controlling the illegal use of narcotic drugs. Surround the sale and illicit use of habit-forming drugs with all necessary and desirable precautions. No honest medical man will raise a single word of protest to this. On the contrary, he will give every aid to the carrying out of such measures. But when the law extends to the legitimate practice of medicine, and assumes to dominate the acts of physicians in the honorable prosecution of their profession, after they have established their moral and mental fitness therefor, it not only places an unjust and unwarranted stigma on a hard working, faithful class of men, but trespasses on the most sacred relations between physicians and their patients. As Mr. Lewis so well says in the letter above referred to, it imposes a "burden on the profession which is out of proportion to the benefits to the public." Is it fair to penalize the whole body of earnest, self-respecting doctors, because a few miserable rascals have prostituted their calling? Is there not ample ways of punishing the guilty without bringing the whole profession under the humiliating and degrading police restrictions of the present New York State law? It is very well to say that the honest physician will offer no objection to the restrictions of the law. This is not true, for there is no self-respecting, honorable doctor in the state, with any practice at all, who will not protest with all the energy at his command when he realizes how the slightest mistake due to excessive fatigue or overwork may mean arrest, the damning of his character—and possibly a prison sentence. More than one honest,

hard working doctor has suffered from an innocent failure to follow or properly interpret the mandates of the law. Under present day conditions with countless medical men responding to their country's call, the labors of those who remain in civilian practice are going to be increased enormously. No murmur of protest will be heard, but the liability of error and oversight in fulfilling the requirements of the so-called anti-narcotic law will be greatly increased.

Is there any sense or right in handicapping the men of whom so much is asked, and expected? The situation resolves itself down to the premise that a legally licensed practitioner of medicine is qualified and entitled to practice medicine without special restriction, or is he not? The most vital essential of successful medical practice is the untrammelled exercise of knowledge and judgment. Anything that tends to limit or restrict this exercise of medical knowledge and judgment is harmful and detrimental to the best interests of the sick.

There are many other things that might be said concerning the grave injury which the present state narcotic law is doing to the medical profession, but we have not the space at this time. Suffice it to say that the present law ought to be repealed without delay and a new law passed harmonizing with, and reinforcing the Federal or Harrison law.

The evil of drug addiction will never be removed or overcome by legislation. Judicious laws can help, but the problem is essentially medical, and its ultimate solution must come thru medical science. It is our earnest hope, in leaving the subject, that the many New York physicians who will read these words may ponder well their significance.



The Right Man.—It has long been the policy of this journal to give recognition to medical men whose work for their fellow men has been particularly meritorious. At the present time in this country we have a great many physicians who have shown unusual talents in more than one direction.



There is one, however, whose ability for organization and executive management has redounded so greatly to the benefit, as well as to the credit of the American medical profession, that we believe it especially incumbent upon us to express a word of earnest endorsement and commendation for the splendid work he has done as the medical member of the National Committee of Defense. We refer, of course, to Dr. Franklin H. Martin. Called to a difficult and arduous task he has proven his ability in no uncertain way. The many problems of a medical character that have arisen have been met with intelligence and whole hearted devotion to the interests of the country. Tactfully, he has cooperated with the established medical agencies of the government, and the results that have been accomplished in building up adequate medical organizations for the army and navy, owe much to Dr. Martin's comprehensive handling of a difficult situation. At the present writing it is impossible to go into detail concerning all the good work Dr. Martin has done. Some day the full story will be told and the profession will find that its traditional efficiency, devotion to duty, and self-effacement have been exemplified in the fullest degree. Gratefully and with

full appreciation of the difficulties encountered, we heartily commend Dr. Martin's splendid services to the Nation. May his health and strength enable him to "carry on," as the British say, as long as the country needs him, for he is "the right man in the right place."

Safeguarding Foods and Drugs.—In the enforcement of the Food and Drugs Act during the last year, U. S. Department of Agriculture officials analyzed 29,833 samples of foods and drugs offered for interstate shipment and for import. A physical examination was made of samples from 76,468 shipments offered for import. Of these foreign shipments, 6,353 were found to violate the law in some respects and were either excluded from the country or admitted only after the importers had relabeled them to comply with the law. Of the samples of domestic products analyzed, 3,535, either because of the nature of the product or because the label on it did not tell the truth, were found to be in violation of the Federal law. In 1,364 cases the Department recommended to the Department of Justice that criminal prosecution be instituted against the manufacturers or that the goods be seized. In many cases where there was no evidence of intention to defraud, and where there was merely some easily remedied flaw in the wording of a label, the shippers, after being warned in hearings, voluntarily took steps which made their products fully comply with the requirements. In all, there were held 8,715 such hearings, many of which resulted in the prosecutions indicated and the gathering of evidence for a large number of additional cases, which will be forwarded to the Department of Justice.

The Bureau of Chemistry, in its annual report, also calls attention to the fact that thru the system of Service and Regula-

tory Announcements now in use, manufacturers are given due notice of the requirements and thus are enabled voluntarily to make their products conform to the law. In this way the Government achieves its purpose, frequently without entering into needless and very expensive litigation.

In the regulatory work, special emphasis has been given to the control of drug products and foods liable to spoilage and pollution. These frequently constitute a serious menace to health. The food inspectors have been instructed to be particularly watchful for interstate shipments of bad eggs, milk, oysters, spoiled canned goods, and false and fraudulently labeled medicines and spurious, synthetic drugs.

CURBING FRAUDULENT MEDICINES.

Attempts to counterfeit or adulterate imported drugs have been more common since the recent high price and scarcity of many of these products encouraged their imitation. It is interesting to note that of the 1,036 cases terminated in the courts during the year, 198 were brought on account of the false and fraudulent labeling of medicines. In all of these medical cases, save five, the courts found for the Government, and this, it is believed, has exercised an important deterrent effect on the vendors of nostrums shipped from one state to another.

The work of controlling the fraudulent labels of medicines and mineral waters has been greatly strengthened by the establishment of a separate office to deal with these matters. At the request of the Secretary of Agriculture an officer of the U. S. Public Health Service has been detailed to take charge of this work. Moreover, thru the close cooperation established with the foods and drugs officials of many of the states, the Department was able to direct the attention of the local authorities to the presence of spurious drugs in their states and, as a result, much of these fraudulent goods in the hands of local dealers and beyond the reach of the Federal authorities were destroyed by state and municipal officers who, in many cases, prosecuted those responsible for the local traffic.

MILK, EGGS AND OYSTERS.

The cooperation in the sanitary control of the milk supply of small cities described in the report for last year has been extended in Illinois, Iowa, Missouri, Kansas, Nebraska and New England. It is proposed

to repeat this work year after year, extending it each year to new territory. In some localities bad conditions were found, due in the main to insufficient cooling and careless handling. Perhaps the best result of this work has been that it stimulated some of the local authorities to take up similar work independently so that definite permanent improvement of the milk supply of a number of cities has resulted. The cooperative work on the control of the shipment of decomposed eggs, described in the report of last year, has been extended to cover much of the territory in which shipments originate so that eggs are now candled before shipment far more than formerly and the spoiled eggs destroyed or fed to poultry and stock. At the same time information given to local officials has helped them to curb local traffic in eggs rejected in candling.

The Bureau of Chemistry, after making cooperative sanitary surveys of oyster beds, issued warnings against the interstate shipment of oysters from polluted and doubtful beds and, where these warnings were not regarded, undertook prosecutions. As a result, interstate shipment from such territory was stopped.

OTHER ADULTERATIONS.

The campaign against the sweating of immature oranges and immature grapefruit, so as to give the immature fruit the color of ripe fruit, has been successful largely because of the active help of the greater part of the citrus-fruit producers. Comparatively few sweated, immature oranges were offered during the last year, and it is believed the better quality of fruit resulted in a steadier market so that the producer as well as the consumer benefited.

Other forms of adulteration not already mentioned, that received especial attention, are the adulteration of scallops and canned tomatoes with water, the substitution of colored starch paste for tomato sauce, the reprocessing of spoiled canned goods, the traffic in cull beans, in decomposed tomato products, in rancid olive oil, in wormy horse beans, the substitution of foreign fat for cacao butter in and the addition of cacao shells to cacao products, the adulteration of rice bran with rice hulls, the coloring of inferior macaroni and of plain noodles, the misbranding of domestic macaroni in simulation of imported goods, and the adulteration of oats with water or weed seeds.



ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF ADVANCED CASES OF PULMONARY TUBERCULOSIS.

BY

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Looking back over a period of more than twenty-five years of special interest and experience in the management of cases of pulmonary tuberculosis in clinic, hospital, sanatorium and private practice, from the standpoint of prognosis my cases fall into three fairly defined groups. There is first the relatively small number of patients with good resistance and the inestimable advantage of an early diagnosis, who usually do well with the ordinary dietetic and hygienic treatment. These cases after a term of sanatorium care often make a prompt arrest of their disease followed by a definite recovery, and may be able within a year to return to and continue their regular occupations, providing they practice conscientiously the mode of life they have learned at the sanatorium. It is indeed not improbable that a certain number of these cases would do well under any conditions, for with our more refined methods of diagnosis

and greater vigilance in detecting early cases, it is undoubtedly true that not a few patients are correctly diagnosed as tuberculous in whom the *vis medicatrix naturae* alone is sufficient to insure recovery even under rather indifferent living conditions. These are the cases which contribute in no small degree to the brilliant statistical results of the sanatoria, and constitute such an apparent triumph for the fresh air and hygienic methods. In the last analysis, however, the dietetic and hygienic treatment is in a sense not treatment at all for it consists simply in placing the patient in the most favorable possible position for his life and death struggle with his potentially formidable disease, and then letting him fight it out to a finish with his own unaided natural powers of resistance. Fresh air, good nourishment, rest and baths, about which we have heard so much in the anti-tuberculosis propaganda, are really quite as important for well people as for sick, and the emphasis which is laid upon these elementary conditions for the maintenance of health is in effect an indictment of our modern, civilized life in urban communities, and an admission of failure in the treatment of serious cases of tuberculosis.

All people, sick or well, should have decent living conditions, sufficient nourishing food, fresh air, sunlight, adequate rest, baths and all the necessary appliances of

personal hygiene. It is a somewhat extraordinary fact that so many city dwellers, in order to obtain them, are obliged to be removed from their own homes.

The second prognostic group of cases is the much larger number of patients with moderately advanced disease and bacillary sputum, who do fairly well with sanatorium or home treatment, who gain weight and advance to a certain point, but fail to make a definite arrest, and speedily relapse if they attempt to resume an active life. If they are sufficiently coddled and can keep up the minutely regulated and artificial life of the sanatorium they may continue indefinitely the selfish and precarious existence of the chronic invalid, altho their families and friends may, in their hearts, cherish the belief that it would be better, perhaps, for them to die. It was Charles II, who made a jesting apology for the unconscionable length of time he took in dying. These cases are often helped, may be lifted out of their rut, and escape becoming sanatoriumized by the cautious administration of graduated doses of tuberculin, which is a real therapeutic and at times an invaluable measure.

The third, and by far, the largest group of cases is that comprehending those patients in whom their disease is recognized too late for sanatorium or other effective treatment, and who are doomed to a rapidly progressive and fatal termination. I have always felt that written in invisible letters over the doors of several of the wards of St. Joseph's Hospital is the mournful greeting of the Roman gladiator "*Morituri te salutamus!*" or the equally sinister inscription of Dante—"Abandon ye all hope who enter here." I know no more dispiriting and thankless task than the care of these forlorn unfortunates, whom medical science

and God alike appear to have forgotten. Until a comparatively recent period these cases, with which our tuberculosis hospitals are filled, were considered beyond the reach of possible help, but now for a small number of them a slender ray of hope exists, if in one lung there remains a modicum of sound tissue.

It is indeed fortunate that nature has been so generous in her provision of a redundant supply of pulmonary substance. We have two eyes, two ears, two kidneys and luckily two lungs. For the tuberculous patient especially, it is a stroke of great good fortune that he has two strings to his bow, for it is tragical to consider what the effect would be if he had but one lung as he has but one heart. Anyone who has even three-fourths of one lung, functionally capable, may get along very well thru a fairly long and useful life, and it is upon this fact that the treatment by induced pneumothorax is based.

It had long been a matter of observation among good clinicians that at times a pleural effusion may have a favorable effect upon a tuberculous lung. I can recall a case of empyema in a tuberculous patient some fifteen years ago in St. Joseph's Hospital who learned from experience that he was in better health when his right chest was distended with sero-pus. Aspiration of the fluid and expansion of the tightly compressed and diseased lung would invariably be followed by a rise of temperature and increased activity in his symptoms. He requested his physicians to desist in their well meant efforts to rid him of his large and recurrent collections of pus which served for him a useful purpose. It was doubtless such cases as this that suggested to Forlanini the method of collapsing the diseased lung by introducing nitrogen

gas, his first experiments having been made as long ago as 1882, the memorable year of the discovery of the tubercle bacillus.

It is an interesting fact in the history of the method that one of the pioneers in the development of the pneumothorax treatment was the distinguished Chicago surgeon, Murphy, who independently of Forlanini, in 1898 advocated and practiced a similar procedure. It is eminently fitting that a surgeon should have contributed to the development of the idea, for the treatment is founded upon the old and well-known surgical principle of immobilization and rest for a diseased organ. If we are driving a team of horses and one of them goes lame or breaks a leg, we get on much better by disengaging the lame horse and proceeding with the well one. This principle of fixation and rest has been carried out for years in the treatment of bones and joints. A tuberculous knee or ankle is put up in plaster of Paris or splints and relieved of weight bearing. A diseased hip is treated with a suitable brace or some form of traction apparatus. The application of the method is not so simple and easy in the case of a tuberculous lung but the principle is the same. It has been demonstrated that we may collapse the whole of one lung with relative impunity, putting it out of commission and depending upon its comparatively healthy fellow to carry on the work of both.

What are the indications for and limitations of the operation? It was formerly and is sometimes still urged that the treatment should be used only for patients in whom the disease is practically confined to but one lung. It is not often, however, that we see advanced tuberculosis in which some evidence of disease may not be detected in both lungs. Some of the most

brilliant results of the pneumothorax treatment have been in patients having a considerable involvement of both lungs. Here, as in every case of tuberculosis, the treatment should be carefully individualized and based upon a rational study of the patient by all the ordinary methods of examination, including X-ray plates and the fluoroscope when it is possible.

Cases most suitable for collapse therapy are those which have been thoroly tried out and have failed to respond to other methods of treatment, who have active and progressive disease or a cavity in the top of one lung with the other lung relatively sound, who are febrile and are losing weight.

After a few injections of the gas in this familiar and unfavorable type of tuberculous patient, the temperature may drop to normal, the cough and expectoration be reduced by one-half or more, and the morale of the patient be completely changed. With lessened toxemia the appetite and digestion are improved, he begins to put on weight, and the bedridden patient of many months becomes an ambulant case, infused with new hope and provided with a sound basis for further progress. Besides the favorable results which may be seen in this common type of chronic disease, the results are often life saving and astonishingly brilliant in hemorrhage cases. If we can, with certainty, ascertain which lung is the source of the bleeding, arrest of the hemorrhage may be predicted with almost the same certainty as when a tourniquet is applied to a bleeding limb.

As my experience with the method has increased, I have felt that there are fewer real contraindications to a trial of pneumothorax than we have hitherto believed.

Obviously moribund and incurable cases are of course to be excluded, and one should hesitate to apply the treatment to cases with grave complications such as diabetes, advanced nephritis, intestinal tuberculosis, organic disease of the heart, tuberculous kidneys and perhaps severe tuberculous laryngitis. And yet the procedure is so simple, with a careful technic the dangers are so negligible, that I think even many cases that are apparently unfavorable may often have the benefit of a trial. I am sure that even the case that cannot be permanently relieved is often made more comfortable and his life may be prolonged by the treatment. In two of my own cases with well marked tuberculous laryngitis, a notable improvement in the throat condition has taken place thru the relief afforded from nagging cough, great diminution in the daily quantity of sputum and lessened toxemia. When a cavity is present in a lower lobe the case is usually a less favorable one for the treatment.

If for any reason after the introduction of gas, the patient does not react well to it, if he suffers discomfort from dyspnea, if no good effect is observed on the temperature, cough or quantity of expectoration, in ten days or two weeks the gas is absorbed and his condition is precisely the same that it was before the trial was made. Familiarity with the method and the usual surgical precautions make the possible dangers remote and practically negligible, and the possibilities for the patient are immense.

The complications seen and the rare accidents occasionally reported are so infrequent that they cannot count as a factor in determining a trial of pneumothorax in suitable cases. A certain amount of subcutaneous emphysema is often seen after the insufflations especially if strong positive

pressure is indicated by the manometer before the conclusion of the operation. This is of transient duration and usually occasions no inconvenience excepting possibly a little tension in the tissues of the neck. In a few cases there has been difficulty in swallowing. Patients complain, not infrequently, of a transient fullness and oppression in the chest. When the gas is administered on the left side there is sometimes a temporary acceleration of the pulse, a feeling of palpitation and discomfort referable to the heart. This may generally be prevented by a more gradual administration of the gas. I cannot help feeling, however, that the rapid heart action, dyspnea, slight faintness and prostration, of which the patient may complain, are largely psychic and due to apprehension and the novelty of the treatment. A paroxysm of coughing may occur and then the inflow of the gas should be temporarily checked, or administered less rapidly. I have never seen a case of gas embolism or so-called pleural shock. The latter will be prevented by thoroly anesthetizing, with one-half per cent. solution novocaine the tract thru which the pneumothorax needle is thrust. On three occasions I have undoubtedly punctured the lung. This accident produced several slight hemoptyses productive of no harm to the patient and which in each case entirely disappeared within a few hours. When hemoptysis has been a symptom of the disease it is favorably influenced by the collapse treatment. In one case a spontaneous pneumothorax occurred five days after the patient's third injection. This was, I think, in no way connected with the gas treatments from which the patient had received marked benefit. I have had one experience which I have not seen recorded in

any of the voluminous literature on pneumothorax.

This was in a patient with densely thickened pleura and adhesions in whom I had difficulty, after five months of successful treatment, in finding a free pleural space for a satisfactory compression. In my last trial puncture, I thought for an instant on account of the manometric oscillations that I was in the free intrapleural space, but observed with dismay that the rapid oscillations were synchronous with the heart beats and not with the respirations. I feared for a moment that I had penetrated the pericardium or the heart itself, perhaps, but was reassured by the thought that this was impossible on account of the site chosen for the puncture and the carefully determined position of the heart by a previous fluoroscopic examination. What had doubtless happened was the fixation of the needle in an adhesion attached to the pericardium to which the pulsations of the heart were directly transmitted. In another instance the needle was occluded by cheesy tuberculous material which could be removed by the stylet. In five out of fifty of my cases I have had a pleurisy with effusion which is a frequent complication noted by all who have used the treatment extensively. Aside from a reduction in the amount of gas possible to introduce on account of the bulk of the fluid, this complication has never seemed of much importance. When the amount of fluid is small, it may be detected only in the fluoroscopic examinations, or there may be the escape of a few drops of clear fluid from the needle or the puncture in the chest wall. The succussion splash of Hippocrates may be elicited and the patient himself may be the first to discover this in moving about in bed. It is instructive to learn in these cases how readily a small effusion in the

pleural sinus may escape recognition in spite of the most careful percussion and auscultation of the chest.

The site to be chosen for the introduction of the needle is determined by a careful physical exploration of the patient's chest, by percussion and the stethoscope, and also the fluoroscope and X-ray plates. In a number of instances where patients have been too ill to be removed to a laboratory for X-ray examination, I have not hesitated to use the treatment, without preliminary X-ray studies, when I believed it promised benefit. Where it is possible, however, the X-ray examination is always an advantage. Cavities, adhesions and thickened pleura are to be sedulously avoided, and an effort should be made to select a spot where the percussion note and the breath and voice sounds approximate most closely to the normal. The flow of gas should never, of course, be attempted until the readings of the manometer tube, wide oscillations with negative pressure, indicate beyond the possibility of doubt that we are in the free pleural cavity.

In the cases here reported the Floyd Robinson apparatus has been employed, usually with one-half per cent. novocaine anesthesia altho in some cases one or two per cent. cocaine solution has been used. Before introducing the needle, which has a rather blunt point to avoid injuring the lung, a small incision in the skin is generally made with an iridectomy knife or small scalpel.

I have never been able to understand why some writers advise arbitrarily limiting the amount of gas to two, three or four hundred c. c. If the patient takes the gas well, I can see no reason when we are trying to collapse the lung and secure functional inactivity of the part and approximation of the walls of a cavity, with the resulting ad-

vantages of diminution in cough and expectoration, why all of the gas that can be introduced without harm to the patient may not be given at the initial treatment. Observe the limitation, however, *without harm to the patient*. Dyspnea, rapid heart action or pain should cause the cessation of the flow of gas, irrespective of the amount introduced, which in all cases should depend upon the subjective symptoms and objective signs during the administration. The purpose, however, is to secure a collapse of the lung, and when the patient takes the gas nicely, without untoward symptoms of any kind, I can see no reason why we should not promptly attain this result at the first treatment, if possible.

After the first few treatments the patient should have a period of rest in bed and careful observation, but after we have taken his measure and have learned how he reacts to the treatment after the novelty has worn away, in many cases the gas may be administered as a part of office treatment. The gas is usually absorbed more rapidly at first than after a number of injections have been made. It is unusual for seven or eight hundred c. c. to last longer than ten or fourteen days after the first injection. The largest amount I have given is 1650 c. c. A number of gases have been employed in pneumothorax, it being, of course, simply the mechanical effect of the pressure that is desired. In practice it has been found that sterile nitrogen, on account of its being less rapidly absorbed than other gases experimented with, is the one to be usually preferred. It may be interesting in this connection to note that at the Loomis Sanatorium, and several other institutions in favorable climatic situations, atmospheric, filtered air has been used with success. The disadvantage is its more rapid absorption.

In one case in which I used Sullivan County air at Loomis 1350 c. c., which had produced a very satisfactory collapse as demonstrated by the fluoroscope—the collapsed lung, with two large cavities, hanging like a limp rag in the pleural cavity—was completely absorbed in one week, necessitating another early treatment. This quantity of nitrogen would probably have remained, not greatly diminished, after two or even three weeks.

In the past three years I have employed the pneumothorax treatment in fifty cases, all of them in a far advanced stage of the disease, not more than ten of which were without cavities of considerable size. In twelve of these cases very good permanent results were obtained. In six the effects of the treatment might be considered somewhat spectacular. One patient, who received twenty injections, gained fifty-six pounds, lost her fever, cough, expectoration and bacilli and has been apparently well for a year and a half. Another has gained twenty-five and a half pounds in four months and was able to take long walks during the summer over mountain roads. Another patient who was a hospital case with fever chills and hemorrhages has become an ambulant case, has lost her bacilli and has gained twenty pounds in weight. Two others have been able to resume their work. In two cases with laryngeal complication there has been a marked improvement in their throats as well as in their general condition. Twelve other cases have been treated with satisfactory effect, altho the results have not been so marked as in the first group. In two of these cases pneumothorax was administered for severe and uncontrollable hemorrhage, with prompt arrest of the symptom.

In six cases the disease has been pro-

gressive and there has been observed little permanent effect from the treatment. One of these cases, which did very well for a year or longer, has received forty injections. In the past eight months there has been an extension of disease in the other lung with formation of a small cavity in the apex. Another patient, who received twenty-seven injections, did very well for a time but has lost fifteen and a half pounds in ten months and has discontinued treatment.

Eight cases have died, two after a single injection, in which the treatment was used as a last resort and was no possible factor in the fatal issue. One of these cases, besides his tuberculosis had syphilis and Bright's disease, the other, ascites and edema of the limbs with symptoms of intestinal tuberculosis. Another of the cases who died and who had made a notable improvement developed acute articular rheumatism with a purpuric eruption and died suddenly nine days after her third injection of 800 c. c., apparently from a rheumatic cardiac complication. A patient who had gained twelve pounds in weight after four treatments and was up and about acting as a ward helper, failed rapidly and died after refusing to continue her treatment. In another of the fatal cases with active and progressive disease complicated by tuberculous arthritis, the pneumothorax treatment was discontinued after a few injections.

The twelve remaining cases to be accounted for are equally divided between those in whom repeated efforts were unsuccessful in effecting an entrance into the pleural cavity and cases who discontinued treatment after one or two injections and before any significant effect could be expected.

303 Amsterdam Avenue.

FORTHCOMING BULLETINS FROM OFFICE OF THE SURGEON GEN- ERAL OF THE ARMY.

BY

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Owing to the enormous stress occasioned by the present great war in Europe, there is a very deplorable and markedly appreciable falling-off in the output of scientific publications all over the world, and to this state of things the United States forms no exception; it has come about thru a combination of circumstances, of which all civilized countries are now victims. Primarily, and perhaps chief among these causes is the subtraction of scientific workers from the various fields of science, and their subsequent destruction at the battle-front; secondly, the calling-off of the minds of the civilized of the world's peoples from the activities engaged in, in times of peace, to consider the various phases of the universal conflict now on; thirdly, the enormous expenditures of the world's wealth and savings upon all that is required to sustain this war of the nations, and, lastly, the operations of the enemies of science, who take advantage of all that war entails to throw impedimenta in the way of scientific progress, to the end that their own aims—often rooted in the superstitions of the ancients—may prevail. Unfortunately only too many of our department bureaucrats of "the system" are arrayed in this class.

All this is extremely deplorable, and is, beyond all peradventure, an index of national weakness, to say not a word as to its shortsightedness. A nation is only great when it can wage its battles successfully,

while, at the same time, it powerfully promotes all those economic and scientific activities that, as a matter of fact, are the only and real ones that redound to a people's greatness at all times.

Prior to this conflict for the freedom of humanity which the races of men are now

useful scientific publications still continue to appear, notwithstanding the increased cost of labor and material to produce them. Only in a few instances has the publication of any of them been abrogated, and, in a still fewer number, suspended entirely.

There has been a temporary check to the



FIG. 1. Right lateral view of the skull of an ancient Peruvian, showing the normal arrangement of the lateral cranial sutures and total absence of epipterics. Coll. U. S. National Museum. Photo by the author.

passing thru, the publications of the scientific bureaux of our Federal government were not only wonderfully numerous, but were of a standard not heretofore attained by any nation of the Western Hemisphere, and only by a few of those of the Old World. As a rule, these fine and eminently

publications of the Office of the Surgeon General of the Army, and more than a year has passed since any of those useful and highly scientific productions have made their appearance. They were of the "Bulletin" class, and so well known to the medical profession of the country, that to even

mention any of them here by title would be quite superfluous. Medical officers of the army were the authors of them; and in any instance, before passing to the Government Printing Office for publication, it was necessary to have any particular manuscript and its accompanying illustrations passed upon favorably by a board of regular medic-

fixed that it *cannot be drawn upon for any other purpose*. It required a very stiff fight on the part of those most interested in the continuance of these "Bulletins" of the Surgeon General's Office; but the struggle was finally won—the price of a wagon-load of explosives was secured to open the way for the reappearance of the aforesaid series of



FIG. 2. Left lateral aspect of the cranium of an ancient Peruvian; adolescent. Showing entire absence of epipterics and normal arrangement of the cranial sutures.

al officers of the army, and to receive the approval of the Secretary of War.

Over a year ago the money to publish any more of these "Bulletins," was expended or absorbed into the general sum for "war purposes"; it has only been recently that a few thousand dollars—less than \$3,100—has been secured for this purpose, and so

publications. Further comment upon this point is quite unnecessary, tho there is room for congratulations to those who succeeded in making certain this triumph for modern medical science.

Apart from all this there is a very practical point—one which most distinctly interests the medical profession of the country—

and that is, has the Office any material on hand at the present time, in that these Bulletins may be continued and the money used that has been appropriated for their publication; if so, what subjects will be touched upon in the next appearing ones of the series?

them printed and issued. With this accomplished, General Gorgas can score another triumph to be added to the long list of his previous achievements, in the way of powerfully furthering the interests of medical science in all of her many departments in this country.



FIG. 3. Same cranium as shown in Fig. 2; facial aspect. Example of how these sutures may be seen on direct front view in a child.

It is a well-known fact that there are two of these Bulletins now entirely ready for the printers in the Government Printing Office; they have been favorably passed upon by the Advisory Board; their cost has been estimated—a pecuniary flea-bite by the way—and all that remains is the signature of approval of the Secretary of War to have

Of the two forthcoming Bulletins one is devoted to "The History of the Army Medical Museum," its author being Dr. David S. Lamb, of that institution; no one better than he could possibly have been selected to undertake the task. His interesting and complete history of the museum will be of the greatest value to the profession and a

substantial contribution to American history. The work is well illustrated and brought fully up to date. Doctor Lamb not only served thru the entire Civil War, but he has been connected with the Army Medical Museum for a term of years extending between those of 1868 to the present time. Further, he is author of many medical

material as one of the results of the present war.¹ Physicians, and others the world over, will look with interest for the appearance of this work by Doctor Lamb. As a big page in Federal history it will meet a demand that has, for altogether too long a time, required the pen of a competent historian.

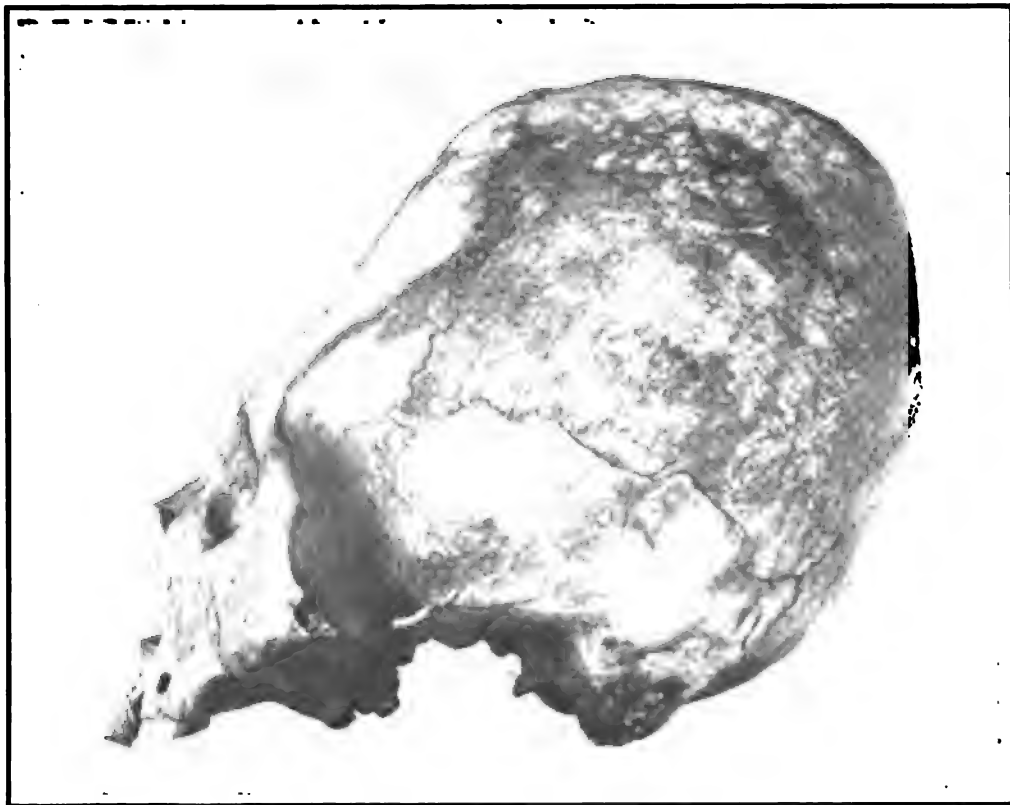


FIG. 4. Tempero-frontal articulation, with a corresponding variation in the sutures; adult. Ancient Peruvian, exhibiting marked head-flattening.

memoirs and histories of medical institutions in this country. This will be a most welcome contribution to American medical history, and a particularly opportune one at this time, inasmuch as a very earnest effort is now on foot to build a new Army Medical Museum to meet the requirements of what will soon accumulate in the way of

The second Bulletin, having been accepted and acted upon long previous to the last, will be published in advance of it, tho it will be immediately followed by Doctor Lamb's contribution. It is by the author of

¹Shufeldt, R. W. "The Army Medical Museums," *Medical Record*, New York, Oct. 20, 1917, pp. 663-665. Five illustrations.

the present article, and entitled a "Comparative Study of Certain Cranial Sutures in the Primates." When issued, it will be No. 1 of a new series of publications by the Office of the Surgeon General of the Army. This new series has been founded for the purpose of opening an avenue for the pub-

the Secretary of War. In form, this series of Bulletins will be of the small quarto size, in that they may accommodate the plates and other illustrations which will be sure to accompany such works.

The one here being noticed, which is, as just stated, the first of its kind,—that is, No.



FIG. 5. Right lateral view of the skull of an ancient Peruvian; adult. This is an unusually fine example of the rarest of all arrangements of the lateral cranial sutures; it is termed a "contact" (x)—the parietal, frontal, temporal and sphenoid, all meeting at one and the same point.

lication of such contributions on human and comparative anatomy, both normal and pathological, as medical officers of the army may contribute, and which come up to the standard required by the Advisory Board, approved of by the Surgeon General and

1 of the series, is devoted to a discussion of the cranial sutures found upon the lateral aspect of the cranium in man, and in the crania of a very large number of existing primates, including the anthropoid apes and their near kin. The work is illustrated by a

large series of plates of human skulls, as well as those of many species of existing simians of numerous families and genera. Other illustrations are distributed thru the text. Many months of continuous labor were required to produce this memoir, and over 20,000 human skulls were carefully examined and compared to secure the bulk of the data. These form the collection of the Department of Physical Anthropology in the United States National Museum, and represent every existing race of people in the world's anthropofauna. In the same connection, hundreds of skulls in the division of mammals of the same institution were examined and compared, and the necessary comparative data obtained from them. These latter were of many species of the manlike simians; the apes of many species below them, and, lastly, the marmosets, tamarins and their nearest congeners.

The work practically exhausts for all time the question of the observable variations of the lateral sutures of the cranium in the order primates, in which group man is the highest form. This Bulletin was entirely ready for publication over two years ago; it was accepted for publication by the Surgeon General, as pointed out in a previous paragraph. The various causes which have delayed its appearance, and which still endanger its final issuance, need not be touched upon in this article. Nearly two years ago a brief "abstract" of the work appeared, and from it a few paragraphs are here selected by way of explanation of its contents.¹

Among other things in the aforesaid abstract, it was said that "In examining large series of skulls, it will be found that some

of their sutures vary but little, as, for example, most of those found between the bones of the face; while on the other hand, a very considerable amount of variation is to be observed in some of the cranial sutures, and especially those at the lateral aspect of the cranium. These sutures are caused to vary in accordance with the mode of articulation of certain of the cranial bones, which latter, in their turn, present various differences in their articulations that are responsible for those sutural variations. Again, as is well known, certain sutures present variations which are due to the presence of certain supernumerary or epactal ossifications, which are intercalated between the cranial bones in the lines of their sutures, examples of which are the Wormian segments and the epipterics—the former usually occurring in the lambdoid suture connecting the parietal and occipital, as well as in the sutures between the parietals and other bones. On the other hand, the adventitious epipterics occur in the spaces of the lateral fontanelles, and are subject to marked variations with respect to number, size and position."

The vast majority of the human skulls examined and compared were those of prehistoric Peruvians, and four of these have been selected to illustrate the present article. It has not been thought necessary to give the tribes to which they belonged, as all such information will be duly set forth in the Bulletin when it appears. In addition to these ancient Peruvians, there were a sufficient number of skulls of other races of the world to satisfy me that I had obtained in my researches all the known variations worthy of record in the aforesaid region of the cranium, and that the variations presented on the part of the epipterics were practically endless in every respect. Among

¹ Shufeldt, R. W. "Comparative Study of Certain Cranial Sutures in the Primates," *The Anatomical Record*, Vol. 9, No. 1, Phila., Jan. 20, 1915, pp. 121-124. Many reprints issued.

the plates will appear the skulls of certain apes and other large simians collected by Colonel Roosevelt in Africa; they proved to be of great value in the course of my comparisons.

Further than this it will not be necessary to enter upon the subject at the present time. All the data has been thoroly systematized and conveniently arranged, and a necessary vocabulary of terms for the variations observed established. Competent anatomists and comparative craniologists who have examined this memoir have said, without qualification, that it is the most exhaustive contribution on the subject ever compiled in the history of human osteology.

SHOULD INEBRIATES BE PUNISHED BY DEATH FOR CRIME?¹

BY

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The severe criticisms by lawyers and judges of medical expert testimony are often based on facts and are not altogether unjust. Physicians in the witness stand are often very stupid, and give strained interpretations of scientific facts, mixed up with opinions and theories, which give rise to a suspicion of hazy, inexact ideas, or some personal motives. Such testimony, concerning the mental condition of inebriates who have committed crime, is still more confusing and doubtful. Physicians who are generally clear on other matters in their everyday life, particularly relating to questions of cause and effect, hesitate and are con-

fused when called to describe the mental condition of persons continuously poisoned by alcohol. The toxic effects of alcohol on the organism seem to be a matter of uncertainty, but when in place of the word alcohol, arsenic or mercury is used, there is great emphasis and clearness of statement. The injurious effects of alcohol are very common, while those of mercury and arsenic are rare. The one is invested with delusions and stupid theories, the other is not. If to the history of inebriety is associated a neurotic ancestry, bad surroundings, irregular habits of living and occupation, why should the expert physician be in doubt as to the degree of injury and damage which the brain has sustained from the use of alcohol combined with these agents? Why should the possibility of mental soundness and capacity of control be considered in persons with this history, and how utterly farcial is the attempt to draw dividing lines where health and disease join, or mental strength and degeneration combine. During the past year over one hundred inebriates have been tried and punished by death for capital crime, and the question of responsibility and the degree of sanity present was the subject of controversial testimony among a large number of medical experts. The results of these trials indicated the profound failure of both courts and medical witnesses to understand the pathology or psychology of these poor victims. Literally the questions of sanity and responsibility turned on the credulous belief of erroneous theories of the effects of alcohol on the brain. The dogmatic assertions that inebriety could not excuse or lessen the responsibility of crime, and that any toxic states before and during the commission of the act increased the culpability, were endorsed by medical witnesses as if they were

¹Read before the New York Médico-Legal Society.

exact facts. Also the still more incomprehensible classification of intoxications into voluntary and involuntary forms in which free will and judgment to discriminate were present, were repeated as scientifically true beyond question. Another assumption prevailed and was unquestioned by the medical witnesses, *viz.* that the question of motives and the consciousness of conduct in one poisoned by alcohol could be traced with as much exactness as a stream of water is followed back to its source. The absurdity of calling states of mania or melancholy voluntary or involuntary acts and the efforts to show their boundaries and limits appeared in the testimony of experts. Going further they declared that the use of alcohol was a mere habit to be put on and off at will, and at no time was the consciousness or power to discriminate concerning the nature and consequence of acts lost entirely. In one instance an expert swore that the prisoner was sane and responsible at the time the act was committed, altho he had drunk to great excess for years and had many attacks of delirium, one within two weeks from the time of the commission of the crime. He also had delusions that he was to be killed by persons who wished to drive him out of the community. In another case, an expert gave similar testimony where the prisoner had drink paroxysms for ten years dating from a sunstroke, and during these paroxysms he was maniacal and destructive. In other instances similar histories of long continued use of spirits and pronounced toxic states were given, and the possibility of such persons being sane and responsible was so remote that it is difficult to understand why it even should be considered. The efforts of courts and attorneys to judge of crime and criminals, where the toxic causes are

alcohol, based on medieval theories of the operations of the brain, are common, but why physicians should accept such theories and conclusions that are literally opposed by all scientific studies is, to say the least, very startling. Nothing seems more clear than that crime, criminals, insanity, inebriety, idiocy and many other forms of degeneration are all results of distinct causes, the origin and growth of which are becoming more and more apparent with every advance of exact knowledge. Theories of moral causes in inebriety, tendencies and impulses under control of the will at all times are unknown and opposed by scientific studies. The inebriate, whose use of alcohol may be a symptom as well as an active cause, is diseased and has a defective brain, with a defective power of control no matter what the appearance may be. The reality of the disease is apparent in the failure of the use of moral means and remedies, such as punishment, ridicule, persecution, suffering and loss which make no impression or in any way check its progressive march. If there was sanity, normal control and consciousness in the inebriate's state, these means would prevent it; but the fact that they increase and actually develop the favoring causes and conditions is an indication that the degeneration is physical and not moral. The inebriate is practically less able to control or judge the nature and character of his acts because of his defective senses and general poisoned condition. Alcohol has paralyzed both the organic and functional activities of the body, and impaired his ability to adjust himself and understand the constantly changing conditions. The irresponsibility of the inebriate from the defective organism is confirmed by the modern studies of the physiological action of alcohol on the brain and nervous

system. No matter how it may be used its effects are practically the same, only varying in degree: First, the action of alcohol is on the vasomotor nerve disturbing the vascular circulation, both increasing and diminishing the flow of blood to the brain and surface of the body; second, the nutrition is disturbed, the oxygen carrying properties are diminished and the toxins are increased and the vitality is lowered. This may be illustrated in the supply and methods of transportation of food to an army. In one the blood vessels are incapable of uniformly furnishing the proper nutrient supplies, and in the other the supply itself is diminished in both quality and quantity. Every dose of alcohol disturbs and lowers the elasticity of the arteries, particularly in their terminals, and the normal rhythmic flow of blood essential to health is broken up. These changes are registered in the increased heart's action, vasomotor palsies and surface congestions. This impairment of the arterial circulation is registered in the derangement of the senses, which can now be measured with great exactness. Alcohol impairs the sight, diminishes its color sense and power of discrimination; the hearing is lessened, and the coordination of sounds is disturbed. Both taste and touch are defective and the consciousness of the external world, coming thru these sources, is perverted. This particular derangement of the impressions from the outside world, thru the avenues of the senses, most seriously affects the power of reason, because such impressions are faulty and the data which they furnish misrepresents the real conditions. The brain is incapable of correctly judging of the surroundings and consequence and nature of acts. This faulty condition of the sense extends to organic impressions within the body. The anes-

thetic effects from spirits promote delusions of strength and vigor, hence the inebriate never realizes the actual conditions and constantly misinterprets the impressions within the body. The coordinating centers and so-called consciousness of the higher relation of events are palsied, hence delusions, illusions, deliriums with stages of mania and imbecility appear from the use of spirits. These are noted in the later stages of mental disturbances which begin with the first use of spirits. The changed conduct, faulty reasoning, emotional instability seen in inebriates is frequently evidence of on-coming paralysis. Often these palsied effects concentrate either on the motor, mental or sensory centers until finally judgment, experience, duty, obligation and power of discrimination are confused or lost. The supposed clearness and activity of the mind does not represent the real condition, and is often the struggle of the coordinating centers to adjust themselves to the new conditions and surroundings. The appearance of health is a mask, and the organic activities of both brain and body become more and more automatic. The mind is cut out from the main circuit and does not act from the data of the present. Amnesia and general loss of memory coming on suddenly and extending over a period of time, during which crime may be committed, is treated with contempt by the courts and regarded as a subterfuge and excuse for the acts committed. Many inebriates executed for crime claim that it was committed without the slightest recollection or consciousness of what they were doing. Testimony to determine the reality of this condition is seldom offered. In a study which I made some years ago of these amnesic trance states, it was found to occur very frequently and its reality did not de-

pend on the statement of the prisoner. The general conduct and automatic character of the act committed, together with a general history of continuous toxic states, made it clear that many crimes were committed in this condition where the degree of responsibility was entirely absent. Many of these persons executed had a history of epileptoid impulses and explosions with concealed or open delusions which were overlooked as of minor importance. These are some of the few pathological states common to inebriates, particularly those who have committed crime, and have reached chronic stages of degeneration. The conclusion cannot be doubted that irresponsibility and mental failure, not only to control but to judge of the relation of acts and the surroundings, are present in all chronic inebriates. Looking at this subject from another point of view it is evident that the legal theory of inebriety is no excuse for crime and the punishment, based on this theory as a deterrent and remedy for its cure and prevention, is a stupid blunder, and contradicted by all experience and statistics. In the lower courts where toxic states from alcohol and mild assaults come into recognition the efforts to cure by fine and imprisonment not only increase the disease, but make the victim more incurable. Different studies of victims punished in the lower courts show that less than one per cent. received any benefit. Each effort to check these toxic states is literally a form of education increasing the debility, lessening the control and precipitating the victim lower and lower; thus the inebriate and degenerates are cultivated and grown by the blundering efforts to prevent and cure them. Of the hundred inebriates executed last year over seventy per cent. had been punished in the lower courts for minor acts, and the

final combination of capital crime was the natural sequence and consequence of a series of events which could have been predicted and was almost certain to follow as the natural results from distinct causes. In this, from the beginning, there was continuous anesthesia and palsy of the higher brain centers and the sensory activities, which went on from bad to worse, making the victim more and more unable to understand the nature and consequence of acts. Notwithstanding this experience, the same methods are pursued and the same reasoning followed that intimidation, fear and suffering will give some new power of control not exercised before. The same theories prevail in the higher courts where the death penalty is supposed to check and deter the use of alcohol and prevent persons from committing crime under its influence. The legal fictions are stated so emphatically that the thoughtless experts credulously accept them as true, actually believing that crimes committed, while suffering from toxic effects of alcohol are, and may be the voluntary acts of sane minds. When the absurdity of this position is pressed the answer is that the mind was sane at the beginning and knew the consequences following from the use of spirits. Another legal fiction has been accepted as an exact fact that evidence of premeditation in the act is an indication of normal reasoning in the inebriate. Still another legal fiction is prominent in the supposition that a purpose or motive previously formed could be conceived and materialized in a brain continuously clouded by alcohol; and lastly, the most astonishing blunder of attempting to point out fixed periods in the operations of the inebriate's mind where sanity and responsibility joined insanity and irresponsibility. In one instance a prisoner had been arrested many times for sudden

unprovoked assaults, evidently the result of concealed delusions, yet the medical experts could not find evidence of an unsound brain. His volubility and clearness of statements seemed stronger proof of sanity than years of insane conduct. Another case, after ten years of the most irresponsible thought and acts, committed an atrocious crime and in jail explained his conduct and gave reasons and talked so clearly and well that he was convicted at once as sane and responsible. He was apparently converted and spent the last days of his life in warning others to avoid the use of spirits. This was literally incipient paresis. Another man whose crime was sensational and whose previous life had been one of continuous alcoholic paralysis was indignant that a defense should be made of insanity, and denied that he was irresponsible. The court accepted his statements and treated with contempt the efforts of medical experts to show the insanity of the man. These examples are common and indicate the dangerous and thoroly futile efforts to discriminate and point out degrees of sanity and rational appreciations of the surroundings and the consequence of acts by inebriates. Society, as well as human justice, suffers by these unreasonable efforts to punish and destroy chronic inebriates for wrong doing. Society has no right to permit defectives to grow up unnoticed, and to be educated to acts of violence and destruction, and then hold them responsible and punish them as sane. The inebriate murderer should never be put on trial in public, and the farcical question of his sanity and responsibility made the subject of public discussion. One great fault at present is the failure and hesitation of the medical profession to defend the teachings of science, particularly when they are opposed to the theories of

courts and the delusions of the present. Some of the conclusions which the scientific studies of the present make prominent may be stated as follows: First, the present legal treatment of inebriety and efforts to apply preventive and deterrent remedies is a great failure. Second, science has proved beyond question that the action of alcohol is an anesthetic and depressant, and its continuous use is followed by sensory and motor impairments, and also poisoning and starvation of the brain and nervous system, hence sanity and responsibility is not possible. Third, the object of the state thru the law to deter crime and protect society from criminal inebriates by dealing with them as sound and responsible fails in every particular. Fourth, the fear that the plea of insanity in crime and the failure to inflict punishment is an excuse and encouragement for crime is opposed by all statistics and experience. Sixth, the inebriate should never be punished by death for crime committed under the influence of alcohol, because he is not mentally sound. Such punishment surrounds the criminal with a contagion which leads other defectives to repeat these very acts. Seventh, the questions of responsibility should never be made the subject of medical controversy. The fact of excessive use of alcohol should be accepted as evidence of mental impairment and inability to control acts and conduct. The medical examination will show this impairment, thus he should be committed to institutional care and treatment the same as the insane. Physicians called to give evidence of the sanity and responsibility of inebriates should be governed entirely by the facts of the neurotic heredity with the spirit and drug history. The more thoroly these are known the more accurately conditions of the brain can be

determined. The question is one of cause and effect, not of theory or legal dictum but of actual fact.

EPILEPSY IN YOUNG ADULTS AND ADOLESCENTS WITH REFERENCE TO A NEW TREATMENT BASED UPON PATHOGENESIS.

BY

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Some Pathological Features.—It is supposed that a special irritability of the cerebral cortex is a prerequisite to the manifestation of epileptic convulsions. In favor of this hypothesis are invoked many facts. In the first place, it is frequent to find in the ascendants or collaterals of epileptics either epilepsy itself, or some other dyscrasia, often showing itself thru the nervous system, whether in the life of relation by irritable or violent temper, eccentricity, feeble-mindedness, or what is loosely called neurasthenia and hysteria, or in the vegetative life itself as by a feeble body, of poor resistance to tuberculosis and acute infection, an addiction to drugs like alcohol, or an incapacity or unwillingness to work steadily or hard.

When analyzed, these facts do not prove that the cerebrum itself is degenerate, for this interpretation does not take into account the bodily determinants of cerebration, such as the respiration, circulation, the metabolism of food, and the internal secretions, the disorder of any of which seriously impairs cerebral function.

I shall not enlarge upon this fruitful theme; for experienced clinicians will appreciate its importance at once, while for others a treatise would have to be written.

A second fact, often used to support the hypothesis that epilepsy is a disorder of the cerebrum, is its onset after injury or disease of the brain, such as is produced by tumor or sclerosed neuroglia vessels.

Even here we cannot in justice dogmatize, for we know that not every arteriosclerosis, cortical tumor, or blow on the head gives rise to convulsions by any means, so that we cannot, without specific investigation, exclude the likelihood of parabolic products being the real producer of the convulsions which occur. That such is the case even in these patients, we have no proof, it is true, but presumptive clinical evidence offers itself. The case which follows is a common enough type to give good illustration:

Epilepsy from Vascular Cerebral Lesion Removed by Metabolic Means.—A man of 64, chief architect in the Indian Service, consulted me February 10, 1910, having been sent by Dr. Philip S. Roy, because of the recent occurrence of epileptiform convulsions with loss of consciousness.

The first attack had occurred in May, 1909, at an elevation of 12,000 feet, near Durango, while he was inspecting the school buildings there. He was unconscious for half an hour. The second attack occurred shortly after, upon leaving the train in Chicago, while making for the staircase. It lasted about an hour. A third attack took place in his office that July, lasting one and a half hours. The fourth, and last, had occurred two nights before his visit to me, while he was visiting a friend and sitting down. It lasted three hours.

The attacks are preceded by a creeping sensation in the left upper arm, passing slowly down to the hand, which becomes numb. In about fifteen minutes unconsciousness supervenes. The face is said to be flushed, but he is uncertain whether there

are convulsions, tho others have told him that there are. The durations of the attacks were only surmised.

Previous History.—Scarlet fever at 6, without bad sequelae. An active living, healthy man, except for two years of asthma, 25 years before, a result of constant attacks of catarrh. It was cured by working as a farm hand for three weeks. He smokes two cigars and a pipe a day. He took coffee, and was a heavy drinker, until after the attack; now he has ceased to take even tea. He has always been abstemious in eating, but has been fond of salty foods. He drank "when he felt like it." Since these attacks he has had a pain over the forehead when coryza occurred. As he had read that insanity might come on from this catarrh, he was at first a little anxious about his state, but soon steeled himself against it. The pain in the head was rather a feeling of depression and a grumbling pain, like that of catarrh. The discharge was slight, and the headache disappeared when it ceased. He used to sleep quite well, but about the time of his attacks began waking in the early morning, and could not fall asleep again. This persisted. He had been recommended to eat more and to take fat meat, and this he has done.

Physical Examination. — Reflexes. — Knee kick, R. L. Achilles reflex, R. L. Triceps, L. R. Radials equal. None markedly exaggerated. Plantar reflex is flexor. The left cremaster is absent.

Sensibility.—No abnormality in lower limbs to pain, touch, temperature or attitudes, tho the latter are sometimes wrongly named, but correctly recognized. Arms, perfect localization of light touches, both segmentally and axilly. Spacing sense of fingers normal. Other modalities normal, except sense of attitudes poor, especially in the left hand. No hemiopia or color inversion of visual fields.

Motility.—Normal, but left fingers weaker than right. Diadokokmesis regular. Pupils contract promptly.

Psychic Functions.—He thinks his memory is weakened since the attacks. There are no disorders of speech. Emotionally, he has always been easily excited when there was a cause, and has been accustomed to occasional sadness.

Diagnosis.—The localization of the aura in the left arm and hand, along with the in-

crease of the triceps reflex and the loss of the cremasteric, point to an organic perturbation of the sensorimotor area of the right hemisphere, probably mainly in or near the cortex of the central fissure, opposite the frontal convolution. The cremaster governing fibres are, of course, attacked in some other situations.

As neoplasm and granuloma were each unlikely, and as the man's age is that of arteriosclerosis, of the state preceding which the recently acquired matutinal insomnia was indicative, I believed it wise, altho lacking proof, to adopt the supposition of sclerogenetic toxicosis, and put it to the experimental proof of therapeutics. Accordingly, a diet light in proteins was ordered, and coffee and tobacco were forbidden. The result was confirmatory, as the patient, one year from the consultation, remained free from attacks and insomnia, and was perfectly well able to perform his very strenuous work, often in high altitudes.

I believe that the first attack was inaugurated in consequence of an ischemia of a part of the right Rolandic region, due to the heart, strained by the high altitude, not being able to keep full of blood, a partially sclerosed vessel distributed to that area. The second attack was likewise due to a sudden demand upon the heart upon leaving the train after a very hot journey.

Thus altho a sclerosed area still remained, the fits ceased when the metabolism was rectified.

This is true not only of epileptic convulsions, but of many varieties of cerebral malfunction such as vertigo, depressions, etc., concerning which I have already written: ("Detection and Treatment of Neurological Phenomena Preceding Arteriosclerosis"—*The American Practitioner*, New York, February, 1914, *Month Cyclo*, 1911, etc.)

The above objections to the cerebral seat of epilepsy become pregnant in conjunction with the fact that in a perfectly healthy cerebrum, even in animals, a toxin, absinthe, will invariably produce an epileptic convulsion. To the exogenous character of the absinthe poison, as an illustration, objection may be brought.

But in puerperal eclampsia, we find a state where an endogenous toxin causes convulsive attacks quite like those found in epilepsy; and that these occur in spite of an undamaged cerebrum, no one denies.

We have in them examples of convulsion purely functional, that is to say, occurring apart from structural changes in the cerebrum. Altho in view of the possibilities suggested by alcoholic wet brain and uremia where the mechanical effect of edema may play a part in the genesis of the convulsions we cannot demonstrably postulate toxicosis as the direct cause of eclampsia, yet, at least a remediable toxicity is the ultimate source of the convulsions as there is no proof of edema as the proximate source.

The Theory as to Pathogenesis and Therefore Treatment of Epileptic Convulsions.—That the substances at work in uremic eclamptic fits are metabolized proteins, is shown by the presence of these in abnormally large amounts in blood and urine of such patients. Should we not expect then that a similar failure of nitrogen metabolism may be the ultimate cause of idiopathic epilepsy?

If so, shall we not improve the condition of these patients by minimizing the metabolic work to be done by them?

Now the standard diet of Vogt allows over 100 grams protein, and most diet customs approximate to this too. But Chittenden has shown that 50 grams is sufficient to maintain both body weight and muscular and mental efficiency, at least over many months. Shall we not find that patients who have convulsions, when eating by custom or the Vogt standard, cease to have them when their metabolic protein load is diminished to the Chittenden standard?

My cases may help to answer this question. Complete metabolic study would have been desirable. But with private patients and no laboratory collaboration, I have not found it possible hitherto. So this contribution is purely clinical except in Case 1 where some study of the renal efficiency supports the preceding argument strongly.

Of course, mere amount of intake is only one factor of health in metabolism. The integrity of the organs of digestion of internal secretion and of excretion is important; and of course the supply of oxygen to the tissues must not be forgotten. Hence, exercise and general hygiene must not be neglected even when a model diet is being followed.

Let me leave without development these

physiological considerations and pass to clinical paradigms.

Cases of Epilepsy in Young Adults.—These consist of adolescents in whom one or at least a few convulsive attacks, truly epileptic, appeared to be brought on by metabolic disturbance, the treatment of which at once led to the disappearance of the attacks. In one instance cessation of metabolic caution led to relapse which was quickly terminated by the reassumption of care.

Scarlatinal Nephritis Followed by Epilepsy, Cessation of Attacks Under Treatment.—Case I. A girl aged 14, was referred in January 1914 by Drs. Spencer and Garnett because of epileptic attacks occurring at the age of ten and eleven and a half, and again three times during the winter of 1913. She loses consciousness for less than a minute, bites her tongue, loses the urine, sleeps heavily for an hour afterwards and has headache and is dizzy for sometime after. The day preceding the attack the breath is exceedingly foul, and for some days there is a pustular eruption on the face; during last summer this had been present on the feet. No psychic disturbances were noticed before the attack; but she had been of irritable disposition until seeing a play, "The Dawn of Tomorrow," illustrating a girl's bravery under misfortune. This stimulated her to better behaviour. She was a blue baby; and when five years old had scarlet fever (followed by a weak back). At eleven, albumin was found abundant in the urine on several occasions. It is now reported to be very slight in amount. She had been dieted as follows:—Breakfast, fruit, cereal, a pint of milk, one egg, brown bread; lunch, oysters, brown bread, milk, custard or gelatine; dinner, fish, potatoes, milk, custard or gelatine. She takes $1\frac{1}{2}$ quarts of milk a day and cocoa now and then. She drinks very little additional fluid and takes no salt. She is never constipated and has not yet menstruated, altho the breasts have developed.

Examination.—The tongue is clear, there is no visible anemia, nor caries of teeth; nutrition is good, but the muscles are inelastic. Reflexes are normal. The heart is irregular, with exaggerated pulmonic second sound, and slight hypertrophy of ventricles. She becomes livid when cold. Urine contains no albumin or casts; there is a strong indican reaction. Estimation of

the renal function by phenolsulphonephthalein showed 33% the first hour and 5% the second hour. This is distinctly below normal, (Dr. Fowler by Geraghty's method). Dr. Frankland by his own method reported that the excretion began in five minutes and ended in three and a half hours, which he thought normal. Blood contained over six million red cells and an excess of hemoglobin. The stools were scybalous.

Treatment.—The special diet which I recommend in accordance with the principles described in this article was prescribed, and continuance of school and play was urged.

Another attack occurred, and she became constipated as the purgatives which she had occasionally taken were forbidden. Figs, however, easily remedied this.

March 8 she was again seen. Reflexes were feeble; but she was in good spirits. The phthalein tests (Fowler) showed 35% the first hour, none in the second hour.

She was seen again April 9, continuing well. On May 23 Dr. Frankland reported somewhat slow elimination, some of the phthalein showing at the fifth hour.

However, there have been no other attacks in spite of the fact that a week before this the breath became very foul and the child heavy, which the mother thought strongly suspicious. The diet was immediately restricted, for three meals, to fruit with milk and one slice of graham bread alone and two grains of calomel were given. Seen in September, the patient was thinner, brisker, happier and better in every way, no more attacks having occurred. In March, 1915, this patient remains well, cheerful and active, playing basketball at school without detriment.

This case I interpret as a metabolic disturbance due to lowered renal function, probably from scarlatinal nephritis. Altho the renal function does not improve, yet, the special standard diet reduces to a minimum the toxicity of which the kidney must dispose; and hence accumulation is prevented; so that the fits no longer occur, in spite of the greatly lowered renal efficiency.

Epilepsy from Overeating.—A clergyman's son, aged 16, was referred to me by Dr. Claytor, January 22, 1911. He had been a healthy boy until January 9, when, while singing after lunch, he fell unconscious in convulsions, preceded by deviation of the

jaw to the left. There was no escape of urine, but he thinks he bit his tongue. There had been no convulsions in childhood; but transient strabismus had developed at four, after chickenpox. While he was at boarding school, aged nine, nightmares had developed after the alarm caused by a negro gun-out-rage. They were supposed to be due to sleeping on the back, and his father cured him by persuading him not to do so. The family history was negative. After the first attack, a systolic bruit was heard at the cardiac apex, which was to the left of the nipple. The urine was clear and without albumin.

The Attack.—A dazed feeling preceded a drawing of the mouth downwards and deviation of the jaw and a sense of falling; then consciousness was lost, he thinks, for five minutes. He awoke tired and stupid, and was frightened for over a minute. This was the only fit. He was sent to me because of his alarm at a conversation at lunch about a palsied doctor's twisted tongue. This caused him to flush and have a sensation as of another attack, which caused him to leave the table saying "that jaw reminded me of my fit; I wish I knew what was the matter with me." His whole attitude was one of great apprehension about his condition.

Examination showed diminution of deep reflexes and absence of the plantar reflexes, with, however, a prompt response of the tensor fasciae latae. The other cutaneous reflexes were prompt.

Sensibility was normal, and motility was unimpaired, except by the inferiority of the right diadochocinesis in a right-handed person. The visual fields were not inverted or contracted; but the veins of the optic papillae were perhaps rather wide.

He has grown ten inches in two years, and he gained ten pounds in one month during the holidays, having eaten enormously of the dainties of the season. He had taken no exercise; and altho he had slept much, he had kept late hours and taken a good deal of beer and tobacco.

The Diagnosis was a functional epilepsy from disordered metabolism due to overeating, smoking and drinking with want of exercise, in a rapidly growing boy.

Treatment and Progress.—He was prescribed moderation in eating and athletics, no tobacco or alcohol and a loose collar

and shirt. He was also reassured against his alarm. The inefficacy of the last advice was shown when he returned to school, for when the boys said "he looked bad," it affected him so that he wept and felt wretched for a long time. Furthermore, he had "a prickly feeling in the head and felt thoroly useless about 11 a. m." This he attributed to the poor ventilation in the schoolroom; and he felt very heavy upon waking in the mornings. He was reassured, and secured permission for fifteen minutes recess out of doors every morning; and he left the track team for the gymnasium, the training for which prevented him eating between meals or smoking.

The diminution of the reflexes had ceased by February 16; and the improvement of his hysterical attitude was shown by the fact that the paralysis of a master, altho it made him fear an attack, caused no blushing. He has enjoyed good health since then.

Epilepsy of Three Years Duration Cured by Careful Metabolic Regulation.—

Man of 24 was referred by Dr. Thomas Martin, September, 1911, on account of convulsions, the first of which occurred at 3 p. m. in April, 1908, after he had been up all night. He had been unconscious for a few minutes and languid for a few days. He returned to college and six weeks later had a slight convulsion lasting for a minute after lunch. Knowing the attacks to be epileptic, he became very wretched, tho otherwise in good health. While in the diplomatic service, he was under the care of a consultant in London, and later went to Carlsbad, taking bromides all the time. Thence in 1909 he went to South America and ceased the bromides. In October, 1910, an attack occurred in his sleep after he had been to a race meeting for two days and had taken a good deal of alcohol; he felt dazed in the morning. This alarmed him and he resumed the careful regime he had formerly followed; in February, 1911, he began to walk in his sleep, and one day jumped over the banister.

He consulted Dr. Pearce Bailey in New York, but had another attack while asleep in the train in the afternoon. On July 4, he had an attack in the night after jumping horses at the show; August 19, an attack at home after returning from the seashore; September 7, after a day on train

and motor; and September 23, on arriving in Washington.

The attacks are like nightmares, they are without premonition, but one day he was dizzy several times before an attack. He does not bite his tongue or micturate; but before losing consciousness he tries to rise from his pillow. He foams at the mouth, turns his head to the right and makes a grunting noise, but only the first attack had been witnessed by others. After the attacks there is dulness followed by restlessness for a day or so. He may be irritable for days preceding and following the attacks. While in England, he had dizziness, especially after eating, while reading or writing, when he would lose or fail to recall the sense of a word.

A year after leaving his London physician, he had taken wine at meals or "whatever was going", but he had ceased wine since October, 1910. His appetite is hearty and he eats fast. He is sometimes constipated. He was circumcised when ten days old. Nocturnal incontinence had occurred occasionally until nine, tho he was trained before two. There were no convulsions in infancy. He was not a nervous child, and had always been of calm temperament and easy to manage. His birth was not difficult, but he has a very long head which is not a family characteristic.

There is a history of sudden drop of pulse rate to forty and of urine of high specific gravity; but all Dr. Martin found was hyperacid urine, with s. g. 1017, a trace of indican and an excess of chlorhydric acid in the stomach.

My examination showed normal, deep knee reflexes; the plantar reflex was absent except in the outer toes, which, however, extend at the distal points, when Chaddock's mode of stimulation is employed, while they flex at the metatarsal joint. Other cutaneous reflexes are also diminished; but the pupil reactions are prompt and well maintained, and the sensibility and motility were unimpaired.

He was prescribed the model diet, and advised to take moderate and regular exercise; a good prognosis was given, because his attacks were so evidently the consequence of metabolic disturbances due on some occasions to overexhaustion and on others to the stagnation of the circulation owing to a too sedentary position for many

hours. He returned in December, 1911, and had had no further attacks, in consequence of which there was much relief of the great anxiety which had made him miserable. The importance of perseverance in his treatment was urged upon him, as he was told that each relapse would be more difficult to control.

I hear that he has had no further attacks and was active and happy March, 1915.

The relations between epilepsy of aberrant types and migraine are numerous; even instances where the two conditions have alternated have been reported. Gowers, especially, has collected many instances of transitional forms of the two conditions. The data of this paper seem to furnish a further resemblance between migraine and epilepsy so fundamental as a common pathogenetic factor, for patients subjected to a low protein dietary of the kind indicated above, either cease to have headaches, or to have them so mildly and rarely, as to regard themselves virtually cured. A paper on this subject is in preparation.

Metabolic Migraine Resembles Petit Mal.—Case IV. A bacteriologist, aged 30, was referred to me in the spring of 1912 by Dr. Paul Johnson, because of attacks he called "bilious," (but not preceded or accompanied by constipation) which produce headache preceded by numbness and pricking in the fingers, followed by dizziness, mental confusion and foolish talk of paraphasic type, without loss of consciousness. These attacks have occurred every two or three months since the age of 22; they are of very short duration. There were no scotomata, but they were formerly accompanied by vomiting. The headache is of the splitting kind, lasts all day and is followed by dulness and slowness of thought the day following. The capacity to concentrate his thoughts is increasingly impaired even between the attacks. He is at times irritable. He has no bad habits and apart from these attacks he is well and strong. He received a blow on the left side of the head as a boy and there is still a dent in the left parietal region, upon which side the headache more often occurs. He has a large appetite, which he says he controls; he eats meat thrice a day, altho, he says, sparingly. The blood pressure is not raised, the reflexes and sensibility are normal.

Treatment and Progress.—He was

given the low protein "standard" diet. He wrote me the following winter, "Since I have reduced the amount of protein in my diet and increased the quantity of vegetables, I have had no recurrence of those spells." Dr. Johnson informs me that he remains well to date.

Explanation and Effects of Emotion.—

The theory advanced is not inconsistent with the tendency, well known to psychiatrists, of emotion to precipitate convulsive attacks of truly epileptic nature in disposed individuals quite apart from hysteria.

The explanation is the interference of emotional reaction of an intense kind with nutrition. Physiological experiment has shown how rapidly the flow of salivary, gastric and intestinal juice is suppressed in dogs by fear. Clinical observation is familiar with the production by emotion of the dry mouth, the stagnant stomach, profound constipation, the clay colored stool on the one hand and on the other hand, of the vomiting, the lenteric diarrhea and the bilious stool. Camon's experiment demonstrates the outpouring of adrenal secretion during fright, and Crile's induction of hyperthyroidism are now classical; everyone is familiar with the cardiac excitation, respiratory disturbance, the sinking sensation of vasomotor paresis and asthenia, the forced urination produced by terror. The effects upon nutrition of such reactions as these must be very great and indeed, observation has already noted glycosuria among the effects of fear. So that it is inevitable that disturbances of protein metabolism must occur, which in some individuals are sufficient to fire the magazine required to produce a critical convulsion.

Thus, in emotion, we are dealing not with a vague cause which cannot be analyzed but with a definite reaction possible to express in terms strictly material. This shows emotion to be merely an accessory rather than an essential or primitive cause of epilepsy.

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Colic.—Anise tea taken by the mother prevents colic in nursing babies, (*Med. Summary*) and increases the flow of milk. Fennel seed tea does the same. Oranges, eaten freely, increases the secretion and flow of milk.

SOME REMARKS ON THE MEDICAL TREATMENT OF CHOLECYSTITIS AND CHOLANGITIS.

BY

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In the treatment of cholecystitis and cholangitis, there is an extreme ground fought over by the surgeon on the one hand and the internist on the other, but in these cases as in many other of our medico-surgical diseases there is a happy medium-ground upon which both internist and surgeon may meet in friendly accord, and the patients be saved much suffering and possible surgical operations by their intelligent handling by the internist.

We could quote here many pages giving the opinions of leading authorities upon this subject, *e. g.*, some of the greatest surgeons in the world urging against early operations, and believing that only one out of four of the patients sent for operation should be operated upon; whereas, other surgeons and some medical clinicians claim that the disease should be recognized as surgical and advocate early surgery with equal intensity.

In a very large proportion of cases, chronic gall-bladder disease tends to gradual clinical cure; in other words, gall-stones become latent, inflammation of the gall-bladder subsides or disappears, and the "gall-stone sufferer" becomes merely a "gall-stone carrier." Hans Kehr estimates this proportion at eighty per cent. Goldammer makes the same estimate.

Franz Frick has demonstrated that whereas autopsy records reveal a larger and larger prevalence of gall-stones at increasing ages, clinical records show the greatest prevalence of gall-bladder diseases between the ages of twenty-five and fifty; in other

words, as people grow older their gall-bladders give them less trouble.

To summarize the indications for medical treatment, we will quote from Bettman:

(1) Simple catarrhal cholecystitis and cholangitis.

(2) The early attacks of biliary colic, before the ability of medical treatment to render the stones latent has been thoroly tested.

(3) Cases of cholecystitis in which the attacks are infrequent and not accompanied by obvious complications.

(4) Cases of cholecystitis with predominating gastric symptoms due to hyperchlorhydria and without marked local signs.

(5) Cases with serious complications on the part of the kidneys, heart or blood vessels which would render surgical intervention dangerous.

The indications for operative treatment are:

(1) Acute purulent cholecystitis threatening life.

(2) Perforation of the gall-bladder.

(3) Gangrene of the gall-bladder.

(4) Chronic distension or thickening of the gall-bladder; in the words of Quenu: "Hydrops calls for an operation, empyema demands it."

(5) Persistent dyspeptic symptoms, especially when accompanied by physical signs of a diseased gall-bladder.

(6) Chronic obstruction of the common duct extending over a period of three months.

(7) Chills and fever in the course of the disease, with signs of enlargement of the liver, local tenderness or jaundice.

(8) The presence of symptoms which seriously interfere with the work of the individual or his ability to enjoy life; the occupation of the patient, his means, and his environment, play a rôle in this decision.

In the consideration of the medical treatment of these cases it is essential that we understand the pathogenesis and etiology. Our advancement along the line of infectious agents in recent years has shown that the biliary tract is particularly susceptible to and the frequent site of infection. The results of infection vary with the virulence

of the infectious agent or microorganism and individual resistance. Acute infections of the biliary passages and of the gall-bladder by virulent bacteria produce such local symptoms and manifestations that the diagnosis is comparatively easy. In the opposite conditions, however, where the infection is more insidious in its onset and chronic in its course, and the infectious microorganism is of low virulence, these cases are not recognized; the lesions and symptoms are so slight that faulty diagnoses are made, and the resulting conditions are overlooked, misunderstood and misinterpreted.

The major symptoms in these cases are the result of obstruction and inflammation of the biliary passages or gall-bladder ducts. In the same infection, whether markedly virulent or less virulent, the same etiology will lead to cholangitis, cholecystitis and cholelithiasis, either singly or combined.

Of the infectious agents in these cases, the *bacillus coli communis* and the typhoid bacillus are the most frequent; but the staphylococci and streptococci are also found, either alone or as mixed infections. Many cases of biliary infection have been noted complicating pneumonia and influenza, and based upon present knowledge of these infectious agents, we would consider the pneumococcus and the *bacillus influenzae* as being the responsible etiological factors. In addition, some etiological importance attaches to the anaerobic bacilli which abound in the intestines.

For a clearer understanding of the methods of infection, I quote the following from Kelly's article on diseases of the gall-bladder and biliary ducts in Osler's System: "The Pathways of Infection: The pathways whereby the biliary tract may become

infected are: (1) the diverticulum of Vater and the common bile duct; (2) the portal circulation; (3) the systemic circulation; (4) the lymphatic circulation; and (5) directly thru the wall of the gall-bladder or the biliary ducts from the peritoneum." These pathways of infection are merely mentioned to illustrate how easy it is for local infections to occur from systemic disease, especially in such susceptible structures as the gall-bladder and its ducts.

With few exceptions every gall-bladder disease begins as a medical case, and the recognition of the initial attack of cholecystitis is the period for expert and rational medical therapy; but the unrecognized and neglected attacks of cholecystitis in every instance lead to the formation of gall-stones. It doubtless requires months of catarrhal inflammation of the gall-bladder for the actual formation of stones, therefore active and persistent treatment is indicated for weeks or months after every attack of cholecystitis.

Just how long we should persevere with medical treatment depends upon the conditions present in each case. No absolute rules can be made generally applicable. So long as the patient is in good condition, free of fever and pain, we can afford to temporize. Continuous loss of weight, regular, tho slight, afternoon rise of temperature, or pronounced debility, may be considered imperative indications for operative intervention. The waiting period may extend ordinarily from one to three months. To prolong medical treatment beyond that is to subject the patient in some of the virulent cases to the danger of permanent damage to the liver structures, and to increased risk during the operation itself. Rolleston advises persistent medical treatment even in the presence of recurrent attacks of fever

and pain, but warns against allowing the patient to become too far reduced in health before resorting to operation.

There can be no question that in a very large number of cases mild catarrhal cholecystitis pursues a rapid course to complete and permanent recovery under even indifferent treatment. That this is true of many moderately severe attacks I am led to believe by the careful observation of numerous patients over long periods of years. Even cases which are due to infection with the typhoid bacillus during or subsequent to an attack of typhoid fever usually terminate in complete recovery, and the numerous cases of so-called "typhoid carriers" where the patients are in perfect health are witness to this fact. Even so aggressive a surgeon as Deaver says: "Typhoid cholecystitis rarely calls for operation. The majority progress favorably. I have followed too many cases to a sure convalescence without operation to believe that all cases arising in or after typhoid fever should be operated on."

The management of simple cholangitis and cholecystitis is much alike. Predisposing factors to some extent can and should be obviated. The patient should live more in the open air, and have active exercise with the assistance of a medical gymnast; if necessary he should have the diet restricted so as to avoid superalimentation; alcohol must be shunned; the eating of meats and fats decidedly limited; the carbohydrates decreased; sugar and sweets eliminated. He should limit himself to a little bread, buttermilk, fresh fish, perfectly ripened fruits and very fresh vegetables, following in fact the dietary advised in functional incompetence of the liver. Women after childbirth should adopt measures to prevent the too frequently re-

maining lax abdomen by proper abdominal exercises and supporting bandages, and should discontinue the practice of wearing the lower garments supported from the waist. Constipation must be overcome, and the alimentary tract kept in the best possible condition. Alkaline and carbonated waters should be drunk freely and frequently. Tea, coffee and chocolate are best omitted, substituting therefor the teas from aromatic herbs, or hot lemonade.

By the Turkish bath or its substitutes the skin with benefit may be kept active, and drainage of the bile passages may be favored by a course at one of the mineral spas. Waters may be selected which are useful in stimulating the unstriated muscle fibers of the biliary ducts, besides removing sources of irritation from the intestine. Some of these waters apparently have a specially favorable action upon the biliary apparatus. Such are several of the springs of Saratoga, those of Bedford, Las Vegas, various sulphur springs, and many others of this country; and abroad, the waters of Carlsbad, Homburg, Vichy, Contrexeville, and Harrogate are a few of a large list that might be recommended, besides some of our excellent local spas, such as Dawson, French Lick, etc., and complete rest in bed.

In inflammatory affections of the liver, especially in cholecystitis and cholangitis, Reichmann recommends giving methylene blue in 0.03 to 0.05 gram doses three times daily. He considers that the drug passes quickly thru the organ and has a destructive action upon bacteria. In this connection, it should be noted that the intermittent and imperfect elimination of methylene blue in the urine is considered by some French observers as a sign of functional deficiency of the liver as it is known to be of the kidneys.

Hexamethylenamin (0.3 to 1 gm.—gr. v to gr. xv) is recommended in subacute cholecystitis, because of its antiseptic effect; for the same purpose a combination of sodium salicylate and sodium benzoate (of each of 0.6 gm.—gr. x) may serve equally well, and as an intestinal antiseptic is to be preferred. When there is a complicating duodenitis, it is best to select bismuth salicylate. It should be given in a mixture, and acts best associated with an equal amount of salol (0.3 gm.—gr. v) in some pleasant suspension.

In a typical case of acute cholecystitis, with fever, vomiting, constipation, severe pain and tenderness in the region of the gall-bladder, the following measures are advised: Place the patient in a full tub bath, very hot; irrigate the colon with hot normal saline solution; follow this by the internal administration of a mixture of aspirin (1 gm.—gr. xv), bismuth subcarbonate (1 gm.—gr. xv), cherry laurel water (4 c. c.—dr. j), added to a sufficient amount of water. Should this be vomited, and should the pain continue, give a hypodermic of codein phosphate and apply over the hypochondrium a large hot compress, and frequently renew it. As soon as it may be tolerated, give a moderate dose of calomel, and follow this after a few hours with a full dose of magnesium sulphate, given as a saturated solution and ice cold. The bowel may be further emptied by using a large colonic irrigation. When the stomach is calmed sufficiently, administer aspirin or magnesium salicylate with bismuth repeatedly as may be required to relieve the pain and soothe the biliary passages.

In a certain proportion of cases the cholangitis or cholelithiasis is very acute. It is accompanied by chills, high temperature, leucocytosis and great distress, often

by severe pain. If the process is limited to the gall-bladder, jaundice may be entirely absent. Under such circumstances the general treatment should include absolute rest, a hot bath followed by a light poultice, antipyretics and saline purgatives. Of the antipyretic drugs, there is a choice, not always to be made without trial. Sodium salicylate, magnesium salicylate, aspirin in fifteen grain doses, with sodium glycocholate five grains every four hours, antipyrin and lactophenin, compose a desirable list. Full doses are required, for their action is not merely to reduce the temperature; often they overcome the pain, besides favoring the escape of bile. In those cases in which the symptoms do not quickly abate, drainage of the gall-bladder is required to save life. Such emergencies arise in the cholecystitis of typhoid and other infections.

When cholecystitis has continued for a considerable time, whether or not accompanied by cholangitis, it is safe to infer that a gall-stone is present, and if the attack is not relieved by medical treatment, it is usually because the gall-bladder is seriously diseased, or else because the stone has been forced into and retained by the cystic or common duct.

For many years, recognizing the dangers of gall-bladder involvement in typhoid fever, and looking upon it as just as serious as the intestinal pathology, it has been my habit during the entire course of typhoid fever to administer five grains of salol and ten grains of urotropin every four hours. In this way, in my private practice, I have not seen serious gall-bladder involvement, either during the course of the disease or afterwards, excepting in one case in which the gall-bladder ruptured the first week after the patient was put to bed.

I am frequently asked what I think of ty-

phoid vaccines for their therapeutic effects, and my reply has lately been this: We recognize the fact of the absolute protective powers of prophylactic doses of typhoid vaccines; we recognize also that it is the infected typhoid gall-bladders that make our "typhoid carriers"; that the typhoid vaccines relieve these cases and render the carrier innocuous; that I believe in every case of typhoid fever therapeutic doses of vaccines should be used, more for their effect upon the gall-bladder; and I am sure that in this contention I am correct, and in every case of cholecystitis, in which there is a typhoid history, the typhoid vaccines should be given. The typhoid infection may exist in the gall-bladder for a great length of time, as has been shown in a number of cases. Hunner records one case in which there was a typhoid cholecystitis eighteen years after the attack of typhoid fever. There are also authentic cases in which the typhoid organism has been found in cholecystitis without the patient ever having had typhoid fever. Blumenthal records a case in which he obtained pure cultures of typhoid bacilli from the gall-bladder in a patient who had never had typhoid fever herself, but who had nursed her husband and one brother during an attack of the disease six or eight years previously.

In the other most frequent type of infective cholecystitis and cholangitis, *viz.*, that of either pure colon bacillus infection, or where the colon bacillus is found in conjunction with other bacteria, I am also a firm believer in the early and even frequent administration of appropriate vaccines. I think that I have recently secured some wonderful results in these cases from the early administration of colon bacillus vaccines. We know the positive results of these vaccines in pyelitis and pyelocystitis,

and from these we can now reasonably expect the same marked and positive results in such infections of the gall-bladder. So, also, in infections from pneumonia and influenza, suitable vaccines may be given with just as much expectancy of positive results as in other cases.

Conclusions.—Cholangitis and cholecystitis are always medical cases in their incipency, and for a reasonable length of time, excepting under emergency conditions as previously stated.

The remedies to be used in these cases are sodium glycocholate grains v, salol grains v, sodium benzoate grains x, urotropin, or better, its citrate, helmitol, in ten grain doses; aspirin grains xv (where pain is present), the other salicylates, alkaline waters, limited and restricted diet, rest in bed, and the administration of suitable and appropriate vaccines.

RELATION OF MUNICIPAL HOSPITALS TO MEDICAL EDUCATION.

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The empirical and case methods of study are generally accepted today as the best process of preparing students for the practice of medicine. When body construction and pathological conditions were chiefly taught from books, medical colleges could be located without regard to population centers. Under the methods now employed, teaching must be done where there are many subjects to observe. Thus the largest cities are the most strategical places

for medical colleges. This much is obvious, but how to render pathological material in large cities available for medical instruction is a problem not yet solved.

In New York there are 88 hospitals with 100 or more beds each. Of these 70 are operated under private auspices, and 18 by the City of New York. Since paid patients in private rooms can be little used for clinical instruction, only the charity patients in the wards of private hospitals are available for instruction. Of these public beds in private hospitals there are about 10,000. Of public beds in municipal hospitals there are 16,000. Thus it is readily seen from the proportion of beds, in hospitals operated by New York City, available for instruction or clinical demonstration, that there are many more than in private hospitals.

Medical colleges are using but a portion of the public beds in private hospitals. Instruction is given in a systematic way only in the following hospitals of New York: Presbyterian, Roosevelt, Flower and Long Island, and in the form of more or less incidental clinics in Post-Graduate, Polyclinic, Mt. Sinai and Brooklyn Hospitals. The five private hospitals where work is systematically and regularly done by the assignment of cases to students have but about 900 public beds. In contrast to this small number New York City has a bed capacity of 16,000, which might be made available for instruction purposes if a suitable system could be worked out.

At the present time the only municipal hospitals in New York in which systematic instruction is given to medical students are Bellevue and Fordham Hospitals. The services in Bellevue Hospital have been divided up on some basis mutually understood between the College of Physicians and Surgeons, Cornell University Medical School

and New York and Bellevue Medical School. Each of these schools has paid instructors, who are assigned to head a service and who supervise all instruction in their respective services. For instance, to the P. & S. is assigned the pediatric service and to Cornell is assigned the neurologic service and to the New York and Bellevue, the gynecologic service. These respective colleges have the charge of, and responsibility for, these respective services, but each of the other colleges not represented in the service may assign students to the services. The schedule of assignment is arranged between the heads of the different sections so that students from each college will be assigned a designated time during which they can serve in each particular service.

At Fordham a similar system is in operation, except that one college is here represented. The students are rotated thru the various services giving a prescribed amount of time to each service. In both Bellevue and Fordham the accepted system of assigning a particular case to a student, who shall take the case history, make certain determinations, and record his physical examination, is in process, the student to follow the case until recovery or death, being present at operations or autopsies if such have been performed. New York City has 14,500 beds in connection with which no such systematic instruction is given. In City Hospital with its thousand beds, no medical college is officially represented. Many of the attendants are instructors or professors in the different medical colleges and they have full liberty of bringing students to the hospital for instruction, of which privilege advantage is taken to a limited extent. The method of doing the instructing is to bring a group of students and take them on the rounds of the serv-

ice, picking out interesting and specially instructive cases, holding a clinic about the bedside, explaining more or less the nature of the ailment, principal symptoms, diagnosis and treatment. The surgical instructors take the students to the operating rooms. No students, however, are taken into the hospital for a prescribed and continuous period and assigned definite cases. Thus the instruction given is most fragmentary and the great amount of material represented by the thousand beds is not made available for instruction. The same situation exists in the Metropolitan Hospital with its two thousand beds, except that a lesser amount of instruction is given there than at the City Hospital. The Central Neurological Hospital has one thousand beds, probably the largest service of this character in the United States, and yet none of this material is used for instruction purposes. Material in the King's County Hospital with its one thousand beds is very little used for clinical instruction. There is probably no better pathological material in the country than that at the King's County Hospital, which receives all classes of cases including psychopathic, and in addition has an almshouse with about 1,300 patients, a large proportion of whom have neurological conditions, yet the patients in this hospital are contributing practically nothing to medical education. Randall's Island, which cares exclusively for the feeble-minded and epileptic, has two thousand patients, the largest group of this class of patients in the United States, yet no instructing is done at this institution. Every medical student should have a sufficient general knowledge of psychologic and psychopathic conditions to enable him at least to distinguish broadly between the insane and feeble-minded, and to differentiate, for example, such mental

conditions as are the result of disarranged functioning of the body and those due to inheritance. They ought to be familiar also with characteristics of epilepsy and what is being accomplished towards its relief by means of surgical operation. This information is at hand at Randall's Island, but up to the present time has not been made available to medical students.

To summarize, there are approximately 16,000 beds in municipal hospitals operated by the City of New York. There is up-to-date medical teaching in connection with but about 1,500 beds in two of the hospitals. As previously stated, there is some bedside teaching done in a more or less fragmentary way and in a manner that is certainly not satisfactory to even those doing the teaching, so it may safely be stated that not more than one-tenth of the patients in the municipal hospitals are contributing to medical education, in so far as they might be used in the direct teaching of students. When one considers that not more than 900 beds in private hospitals are now being used for teaching purposes by the colleges, and that there are fully 14,500 beds in municipal hospitals that are not utilized, a serious question is at once raised as to whether or not there are some means to make this large amount of pathological material available for teaching purposes.

One of the main, if not the chief of the difficulties in the way of utilizing this material is the existence of six medical colleges, each claiming certain rights in the municipal institutions on the grounds that they are supported by taxation. Yet not one of the colleges utilizes material to the extent that it should be utilized, owing to the difficulty of arriving at a satisfactory arrangement or agreement with the other medical colleges. As an illustration of this condition,

take City Hospital, Blackwell's Island. In this hospital are a thousand beds, comprising nearly all classes of cases except psychopathic. No medical college is officially represented in this institution, although most of the colleges have members on the attending staff. It would be unwise and unfair for the City of New York to turn over City Hospital to any one medical body, and it would be a misfortune to attempt to turn it over to three or more, each operating a section of the hospital, as is done in Bellevue.

This system is reasonably successful in Bellevue because of years of development and experimentation. No one would claim, however, that it is satisfactory or very efficient, and I think few would maintain that a similar system should be adopted for any of the other municipal hospitals. In short, the City of New York cannot make available for teaching purposes the many thousands of patients in its hospitals owing largely to the fact that there are a number of medical colleges, each with certain claims upon the tax-supported hospitals, and none of them willing to merge its interests with the other colleges. It is most unfortunate that New York City, the largest city in the world, is not the largest medical center of the world or even the United States. The teaching facilities are here; the brain and skill are here; the pathological material is here; the laboratories are here; but, owing to a lack of unity and centralized and well directed effort, comparatively mediocre attainments are the result.

I do not know whether or not it is feasible or practicable to overcome the shortcomings by any sort of agreements or consolidations on the part of the various medical schools. It may be we must continue to suffer these disadvantages. I feel sure,

however, that the vast amount of pathological material controlled by the City of New York, and which should be used as a basis of instruction of medical students, cannot be made available until some kind of consolidation or agreement is reached by the various medical colleges. The difficulties in the way of reaching some sort of a working agreement or possible consolidation are undoubtedly great. The best result in medical education will not be reached until the field of pathological material is more thoroughly covered than at present. Here's a goal worthy of the most serious effort on the part of the heads and members of the various medical schools in the City of New York.

The municipal hospitals can be made more efficient in their medical work only if the conduct of the various services is centralized in a responsible head serving continuously. There is a marked tendency on the part of New York City to reorganize its hospitals with this end in view, and it is likely to be brought about in a greater or less degree regardless of whether or not the medical colleges participate in such reorganization. A reorganization of this kind necessarily tends to reduce the number of those serving in the hospitals. If the medical colleges were given greater rights and privileges in the municipal hospitals than they now exercise, necessarily the medical staff would have to be reduced in order to centralize the responsibility. Even with the large medical staffs now existing in most of our municipal hospitals there was presented a large number of applications for service on some one of the hospital staffs. Each medical practitioner, who is a taxpayer, feels that he has some rights in a municipal hospital supported by taxation. At times he gets very insistent and demands that he be given a right to serve on a municipal staff.

Necessarily such privileges cannot be granted to many. The number on the medical boards should not only not be enlarged but should be reduced. In doing so there should be kept in mind constantly this fact,—that the ordinary practitioner does have some rights; that altho it is impracticable to let him serve in some capacity in the hospitals, nevertheless he should be put in a position to enlarge his knowledge from the new knowledge constantly being secured in the municipal hospitals. So far as I am aware there has been no endeavor until within the last year to meet this situation. During the past year a system was inaugurated at Greenpoint Hospital, Brooklyn, aiming definitely to make available to the practitioners in that part of Brooklyn, and adjacent portion of Queens, the knowledge and experience gained by the chiefs of those institutions. A local medical association was asked to hold its meetings in the hospital and cards were sent out to all practitioners inviting them to attend the rounds of the chiefs day by day, and especially to attend the joint rounds of the three chiefs, which occur once a week and cover the whole hospital. In addition, special invitations to about 50 practitioners are sent out each week to attend the gynecologic rounds and subsequent operations.

There has been a marked interest on the part of practitioners in that part of Brooklyn in this endeavor on the part of the medical staff to make available some of the facilities and material of the hospital. This endeavor is young, but it seems to have possibilities in it, and, if it be continued, it may be enlarged or corrected by experience and be recognized as a valuable post-graduate course for all practitioners, if adopted generally by all municipal hospitals. Some such system as this, or an endeavor

looking to the instruction of the practitioner, must be adopted if the City of New York is to more and more restrict the numbers on the medical boards of its hospitals, and more especially, if it should turn them over to the control or direction of the medical colleges for teaching purposes. But with some such system in operation for bringing practitioners in more intimate contact with the work of our hospitals, undoubtedly it will be feasible to let the medical colleges enter in and more thoroly control the medical services in the municipal hospitals than has heretofore been done.

I feel sure that New York City will do everything within reason to help promote medical education and to help make New York City the medical Mecca of the world. It remains for the medical colleges to so adjust themselves, one to another, that they may be in a position to avail themselves of the opportunities which New York City offers in such a marked degree.

Yellow Dock.—If the yellow dock, *rumex crispus*, had been as thoroly studied and used as familiarly as rhubarb, would the latter ever have won its present popularity?—*Western Med. Times* (Oct., '17).

Avoid the Spread of Colds.—It is no obligation on the part of persons having colds to see to it that they do not spread these colds to somebody else, asserts Rucker of the *Pacific Med. Jour.* (Oct., 1917). The person who neglects to cover his nose and mouth when he sneezes and coughs, the careless spitter, the person who permits his germ-laden discharges to contaminate things which are going to be handled by other people is a menace to the community. If such a person uses public swimming pools, if he is not amenable to reason and persists in distributing his infection, he should be avoided as a spreader of pestilence.



The Shame of It!—For some time the publications of the country have been staggering under the heavy burden of an abnormal and unwarranted increase in the cost of paper. When in the course of preparing a Revenue Bill the proposal was made by Congress to increase the postage rates of these publications, it was realized by many intelligent people that any increase in this direction at the present time meant ruin to a large number of papers and periodicals. Accordingly a strong protest was made to Congress. The House, dominated by a demagogue, whose intention to penalize the Press of the country was well known, ignored every argument of right and fairness. The Senate, with a keener sense of justice, gave heed to the earnest representations of the entire publishing industry, and showed an inclination to handle the situation in a sane and logical manner.

When the Revenue Bill came to conference, however, the reasonable suggestions offered by the Senate Finance Committee for disposal of the second-class postage matter were ruthlessly attacked by the aforementioned demagogue and his associates. Totally disregarding the fact that the Senate Finance Committee had reached their conclusions only after thoro consideration of all phases of the question, and moved by only one impulse—the attainment of a petty revenge—the demagogue, who held the whip hand, threatened to block the whole Bill unless his original plan for a zone system for increasing the second class rates was included. No claim of patriotism, the stress of the country, or the unjust and impractical character of the plan had the slightest effect. The intelligent and fairminded members of the Senate and the House had to choose between chaos and giving a demagogue his “pound of flesh.”

As a consequence, the ridiculous and altogether illogical zone system was put back into the bill. Altho a great many Senators and Congressmen realized the harm they were doing, not only to thousands of worthy publications, but to the great bulk of the reading public, they feared the consequences to the Nation and its interests if they did not acquiesce.

In the words of an editorial writer in the *Metropolitan* (Dec., 1917) however,

“No sooner was the ink dry upon the President’s signature to the Revenue Bill than the Postmaster was obliged to state that the clause affecting second-class postage would have to be revised, *and for the simple reason that it was unworkable.* Every publisher knew that the clause was unworkable before it was passed and did his best to inform Congress to that effect. But,” continues the above writer, “the majority in the House, cowering under the lash of the slave-driver Kitchin, did not care whether they passed a good bill or a bad bill, provided they satisfied the malice of their master against the great publications of the country. Under the old post-office regulations the great distributing agencies, like the American News Company, were in the habit nearly every day of mailing thousands of packages to local news-dealers made up of a variety of perhaps fifty publications. These packages were mailed with the utmost economy and rapidity at a uniform rate of one cent a pound. The post-office incurred the minimum of trouble and expense in handling them. Under the new law each package will have to be opened and each individual magazine or newspaper will have to be examined in order to find out what proportion the reading matter bears to the advertising columns, a separate rate will have to be established

for each publication, and that rate will vary every day for newspapers, every week for a weekly and every month for a monthly. It is not too much to say that the handling of one package under the new law will require as much time and labor on the part of the post-office as the handling of a hundred packages under the old law. If the new law is conscientiously administered it will treble the amount received by the post-office for each package, but it will multiply the cost of handling about a hundred-fold. No wonder the Postmaster says the clause won't work. It would ruin the post-office, to say nothing of the publisher.

In 1884 when the cent-a-pound rate was first established the post-office invariably showed a large annual deficit. In the thirty years that have elapsed, however, this deficit of the post-office has gradually been reduced until, within the last year or two, it has been converted into a surplus, and within the past two weeks the Postmaster-General has turned into the U. S. Treasury the magnificent sum of \$9,000,000 as the profits of the past year! This gradual and steady change from a large deficit to an actual surplus has been contemporaneous," states the *Metropolitan*, "with a steady, but enormous increase in the volume of second-class mail matter. Can any reasonable being believe that the post-office has been able to make this remarkable improvement in its yearly statement of profit and loss by incurring an annual deficit on second-class mail amounting now to \$80,000,000?

"Let us leave then the argument that the publications owe anything to the post-office, and regard the zone rate purely as a war tax. First of all, we ask why publishers should incur a special war tax? There is no reason, and no reason has been offered. But the publishers have not complained on that score. They have gone down to Congress and they have said we are willing to give up every cent we make in profits during the period of the war to the government. Has any other industry made such an offer? Has any other industry made *half* such an offer? For thirty years the publications of this country have operated under the cent-a-pound rate. Many of our ablest younger men were born under this system. A huge, intricate and useful business has been created under this system. Suddenly Con-

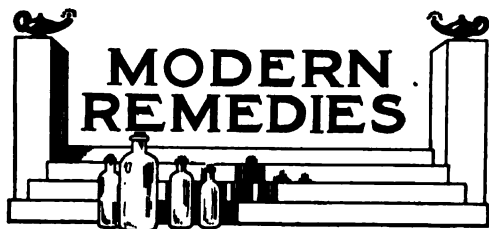
gress passes a law to increase the freight rate of the business 300 per cent.! The shipper of ordinary merchandise makes a great outcry if his carrying charges are increased 10 per cent. Would any Congressman in his senses propose to increase them even 100 per cent.? Of course he would not."

In calling the attention of medical men to the monumental injustice Congress has done, not only to the publications of the country, but also to the reading public, by establishing the zone system, no special reference has been made to the effect on scientific publications. Medical, drug and scientific journals generally, come within its restrictions. Obviously great injury will be done, and aside from driving many of the smaller publications out of business, certain curtailments will surely be manifest all along the line. The scientific interests of the country are bound to suffer.

But it is the question in its broader aspects that should receive the attention of physicians, as well as all other thoughtful men, who are alive to the importance of an unrestricted dissemination of information, and the avoidance of sectionalism. The proposed plan has been passed, to be sure, but the sentiment—both in and out of Congress against allowing it to go into effect, promises some chance of repealing this obnoxious law.

Every thinking person should investigate the zone system, note the evils it carries, and then immediately write their Senators and Congressmen a protest against allowing so pernicious and baneful a plan to remain in force. It should be remembered that the periodicals and newspapers are not shirking their share of taxation, but there is no good reason why this one industry should be singled out for double taxation. Let your Senators and Congressmen know that you are opposed to any scheme or system that, at this critical hour in our Nation's life, tends to restrict the service of the Press, and foster the spirit of sectionalism. Tell your Senators and Congressmen that if a change in the postage rate for magazines seems desirable, it should be based on a comprehensive, and above board investigation into all details of the question.

Ask for a square deal for the publications that serve you and the Nation.



Use of Thymol in Treatment of Hookworm Disease.—Washburn in *Journal American Medical Association* (April 27, 1917) reports that experiments were conducted for determining the efficacy of thymol when administered in capsule form with varying proportions of lactose and with sodium bicarbonate. The routine method employed in the treatment of the disease was to give each patient two treatments (the drug being administered in every instance by a trained assistant) one week apart and then make a microscopic examination using the centrifuge, six days after the second treatment, of a specimen of the bowel excretion to determine whether or not a cure had been effected.

The results obtained demonstrate that thymol is much more effective in the treatment of hookworm disease when it is finely pulverized and mixed with at least an equal amount of lactose. However, in the routine treatment of cases of hookworm disease with the mixture of equal parts of thymol and lactose, it was found that 30 per cent. of the patients suffered unpleasant gastric symptoms. These mild cases of gastric disturbance were found to be relieved by having the patients take a small amount (from 30 to 40 grains) of sodium bicarbonate dissolved in a glass of water.

Tropical Diseases.—Sir Leonard Rogers, *British Medical Journal* (July 28, 1917) following up Vedder's work on emetine, introduced this drug to be given hypodermically as a substitute for ipecacuanha in the treatment of amebic dysentery and amebic hepatitis. It has recently been demonstrated that this method does not, in many instances, sterilize the individual of his amebae, and that many of these cases become chronic carriers. Quite recently Dale,

Low and Dobbell have used a new compound, emetine bismuth iodide, by the mouth in such cases and have found its sterilizing effect on the amebae to be much greater than that of emetine given by hypodermic injection.

It is quite likely, therefore, that the oral administration will supplant the hypodermic method in the treatment of the disease in the future.

Donovan and other British physicians have proposed radiotherapy in the treatment of granuloma of the pudenda and many British practitioners in Africa and the West Indies have demonstrated the value of intravenous injection of salvarsan and other arsenicals in tick fever and yaws.

The Treatment of "Trench Rheumatism" and Allied Conditions by Colloidal Sulphur.—In the *Lancet*, London, (June 30, 1917) Comrie asserts that as a result of prolonged exposure to adverse weather conditions and especially the extremely unfavorable state of cold and dampness which prevails during the winter months in the trenches, many men suffer from a painful and disabling condition of the muscles. This affects especially the parts which are chiefly exposed to damp—viz.: the back and legs—and for want of a better name is popularly designated "trench rheumatism."

The method of treatment finally adopted was to keep the patient in bed for the first fortnight, and to give the colloidal sulphur (beginning with 1 mil. dose and rising to 2 mils. if no reaction took place) every second day for three weeks. With these were combined massage on the alternate days and occasional hot alkaline baths. Commonly there was no general or local reaction, but in some cases the temperature rose about two degrees on the day after the injection; and now and then a painful swelling developed at the site of the injection which was, however, readily dissipated by massage.

In the greater number of subacute cases, lasting several months, complete recovery may be expected after three to five weeks from the commencement of the treatment.

This method of treatment is also very helpful in lingering cases of gonorrheal

rheumatism. It does not, however, take the place of salicylate of soda in relieving the pains of acute articular rheumatism.

The Autoserum Treatment for Chorea.

—Moffett reports in *Medical Record* (Sept. 8, 1917) that chorea is a nervous disease not infrequently following attacks of rheumatism and tonsillitis and is usually accompanied by endocarditis. Probably functional instability of the nervous centers is a potent cause and may depend upon malnutrition. The prognosis is usually good, the mortality having been placed at 2 or 3 per cent.

The patient should be kept in bed without medicine of any kind such as chloral, bromide, or arsenic for four or five days before any treatment is instituted. Another important precaution is to ascertain if the child has tuberculosis or syphilis, as these cases do not do well if injected. Children with enlarged thyroid do not do well if injected with autoserum, but improve when treated with extract of the thyroid gland.

Method of treatment: Fifty c. c. of blood is withdrawn from one of the veins in the arm and then rapidly centrifugalized, which separates the serum from the blood. The serum is then pipetted into a sterilized vessel and placed in the incubator and kept at the temperature of the body. A lumbar puncture is performed in the usual manner and 20 c. c. of the spinal fluid is allowed to flow out. In cases of chorea, this is usually done under a little pressure. After 20 c. c. of the spinal fluid have been withdrawn the blood serum at the body temperature is then slowly injected. This usually takes 5 to 8 minutes and the patient is kept in a recumbent position in bed for at least one or two hours after injection, for if allowed to sit up immediately after injection heart collapse sometimes follows. If the serum injection is to be of any benefit in a case of chorea, improvement should be noted in two or three days; in the very bad cases the muscular twitching of the mouth and movements of the arms become lessened, and one part of the improvement which seems very satisfactory is that children take their feedings much better after their first injection. The first injection is followed in 5 or 6 days by a second one which is performed in the same manner.



Rational Organotherapy

The Pineal Gland.—McCord in a very interesting article in *Surgery, Gynecology and Obstetrics* (Sept., 1917) arrives at the following conclusions: Owing to the lack of unanimity in the literature, any conclusions as to the details of pineal gland function must be made flexible rather than dogmatic.

1. A clinical syndrome is to be associated with disturbances of the functions of the pineal gland. Because of the involution of the pineal at puberty, the constitutional manifestations of pineal pathology appear to be confined to prepuberal years. The essential characteristics (apart from pressure and neighborhood manifestations) are (a) early sexual development evidenced in the enlarged genitalia, pubic hair, general body hair, early change in voice; (b) precocious mental development, manifested in maturity of thought and speech; (c) general overgrowth of body to the extent that a child of 6 or 7 years may have the appearance of a child near puberty.

2. The experimental extirpation of the pineal gland is surgically possible. The gland is not essential for the maintenance of life. The early symptoms following pinealectomy are attributable to the severe brain injury. No changes attend the removal of the gland in adult animals. As to the effects of pinealectomy in young animals, Sarteschi, Foa and Horrax respectively state that the removal of the gland leads to precocity of development. Exner and Boese, and Dandy report no changes after pinealectomy.

3. The administration of pineal substance to young animals is reported to hasten growth and sexual maturity. In unicellular organisms (paramecia) pineal gland extracts increase the rate of reproduction to more than double that of controls. In larval forms (ranidae) both growth and differentiation are hastened as a result of pineal feeding.

4. The inference is allowable that the pineal gland is an organ of internal secretion whose functions, however, are of

minor significance in the general activities of the endocrinous system.

Relation of the Sex Glands to Metabolism.—Murlin reports in *Surgery, Gynecology and Obstetrics* (Sept., 1917) that not only at the beginning and end of sexual life are there changes in the general metabolism, indicating the action of a specific internal secretion from the ovary, but in pregnancy, especially in the first half, at a time when the muscular activities of the woman are not seriously interfered with, there is often a decided gain in weight with changes in the physical contour of the limbs due to the deposition of fat. This occurs at a time when the functional activity of the ovary is disturbed by the growth of the corpus luteum.

The question is not one of scientific interest only, but it is also of great practical importance. The retention of the ovary *in situ* or by transplantation in hysterectomy operations seems at present to be largely a matter of sentiment on the part of the operator.

It should be proved that the removal of these organs deprives the body of an internal secretion having an effect on the general metabolism; then their retention will become a physiological requirement.

Diagnosis of Pituitary Disorders.—In the *Interstate Medical Journal* (Sept., 1917) Walker points out that there may be dyspituitarism with or without tumor of the pituitary body. The diagnosis of tumor of the pituitary body often rests on the demonstration of: (1) Symptoms of glandular disturbance or dyspituitarism, (2) enlargement of the sella turcica as shown by X-ray, (3) characteristic defects in the fields of vision.

The symptoms of glandular disturbance as a whole may be considered as resulting from disturbed secretion of one or both parts of the gland. Thus, the anterior portion, which is strictly epithelial in origin and discharges its secretion into the large sinusoidal blood channels which traverse it, is chiefly related to factors of skeletal development, and may be considered to elabor-

ate a hormone capable of stimulating growth. The posterior lobe is closely related to metabolic processes and a deficiency leads to a noticeable increase in sugar tolerance with tendency to adiposity, subnormal temperature, somnolence, dry skin, polydipsia and polyuria, loss of hair, characteristic psychic—often epileptiform—disturbances. Functional excess, or administration of extracts causes loss of flesh, intolerance for carbohydrates, even spontaneous glycosuria, a moist skin, etc., symptoms, in other words, the reverse of those recounted above. Moreover secondary derangements of other glands occur, more notably the genital organs—an apparent activation with hypophyseal hyperplasia, but definite anaphrodisia, even lack of development or atrophy, when this is hypophyseal hypoplasia. Certain types suggest functional hyperplasia of one lobe with lowered activity of the other, or at one period, an overactivity and later a deficiency of both lobes.

The commonest field defect, accompanying a hypophyseal growth is a bitemporal hemianopsia, or tendency thereto, occurs only about twice as often as homonymous hemianopsia, or tendency thereto, in this group of cases. There are also many cases which become blind in one eye and have a temporal hemianopsia in the other eye, so that it may be uncertain to which class they belong. A considerable number also have shown, predominantly a centrally scotomatous tendency in one or both eyes.

Ovarian Organotherapy.—A serious handicap in the study of ovarian therapy is the fact that the nature of the secretion is not yet known, according to Graves in *Journal of American Medical Association* (Sept. 1, 1917). On account of this doubt as to the nature of the potent substance there has been no effective standardization in preparing the various extracts used clinically and experimentally. That the corpus luteum is an organ of internal secretion was first suggested by Gustav Born, who after studying the corpus luteum verum of pregnancy, expressed the opinion that in histologic structure it corresponds to an internal secretory organ, and that it probably presides over the implantation and development of the fertilized egg in the uterus. It is

now generally accepted that the interstitial cells of the ovary either are identical with the lutein cells of the atretic follicles or at least are derived from them.

Clinical experience with preparations of ovarian substance has revealed that preparations of the corpus luteum, alone are less efficacious therapeutically than are those of the whole ovary.

Theoretical knowledge and scientific experimentation tend to show that an important part of the ovarian internal secretion is elaborated by the interstitial cells.

Ovarian therapy, for its best effectiveness, should include at least the product of the interstitial cells. Preparations should, therefore, comprise the ovarian stroma in order to take advantage of the atretic follicles.

Pituitrin in Postoperative Treatment.—

Davis and Owens (*Texas Medical Journal*, July, 1917) conclude that pituitrin is a valuable drug in stimulating the muscular coat of the intestine after abdominal section in nonseptic cases; that it assists in preventing postoperative shock, as evidenced by the lack of rise of temperature and pulse rate; that it had very little effect upon cases complicated with septic peritonitis; that it stimulates the secretory action of the kidneys in cases of eclampsia, and that it materially reduces the amount of postoperative suffering.

Pituitary Disease.—From a study of one hundred selected cases Abrahamson and Climenko (*J. A. M. A.*) deduce the following conclusions: "The posterior and middle lobes of the pituitary gland secrete a substance or substances which have, according to our observations, the following among other properties: 1. It does not influence sugar metabolism (sugar tolerance is not a sign characteristic of pituitary disease.) 2. It controls the salt content on which the electrical conductivity of the blood depends. 3. This control is not exercised thru the nervous system. 4. Disease of the posterior and intermediate portion of the pituitary gland disturbs the fixed ratio of the salt content of the blood which the secretion or secretions of that gland

normally maintain. 5. Slight disturbance in the control induces alteration in the salt content of the blood and leads to polluria, if there is renal sufficiency, or to a water logging of the tissues if there is renal insufficiency."

Therapeutic Value of Corpus Luteum

Extract.—Happel (*Inter. Med. Jour.*, July, 1917) says that the indications for this agent are menstrual irregularity in young women with associated nervous symptoms, postoperative and natural climacteric, sterility, sexual anesthesia and vomiting of pregnancy. While it may be given by mouth in capsules of two to five grains three times daily, it is best administered intramuscularly two or three times a week in the dose of three grains of the desiccated gland in aqueous solution.



The following was sent to the Secretary of the Medical Society of the State of New York and published in the November issue of the *State Journal*:

DR. FLOYD M. CRANDALL, *Secretary*,
MEDICAL SOCIETY OF THE STATE OF NEW YORK,
17 West 43d Street, City.

DEAR DOCTOR:

I am sending to you herewith enclosed an opinion written by the Court of Special Sessions of the City of New York, Borough of Brooklyn. The opinion was delivered by Judge Collins.

Early in the summer a member of the Medical Society of Kings County was arrested charged with violation of Section 248 of the Public Health Law of the State of New York. The provisions of this law you are familiar with; no doubt you are also familiar with the provisions of the Harrison Law, the Federal enactment covering exactly the same situation.

In view of the fact that the law under which this particular doctor was charged was about to be amended, and by reason of the fact that he was arrested but a few days before a new law was to go into effect, which simply amplifies the former one, and because of the extraordinary unreasonableness of its provisions I undertook the defense of this doctor, who, by the way, is a member of the Committee on Legislation of the Kings County Medical Society.

I was and am convinced that the doctor had fulfilled to the exact letter, every provision of the Federal requirements, not only in the purchase, but in the dispensing of the drugs which is so carefully safeguarded by both Federal and State laws, and very properly so. There was no question in this case about what the facts were, and there was also no doubt but what the doctor lived up to the Federal law, but the State law had been violated as to its terms. The proofs, therefore, in the case were of necessity very short, with the result that the Court convicted the doctor under the State law, and on August 3d the decision of the Court was rendered and sentence suspended.

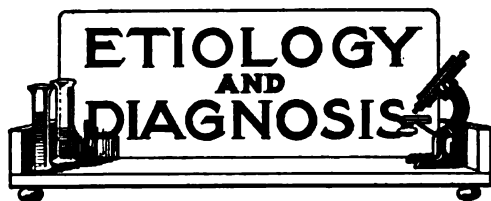
On behalf of this defendant I have served a notice of appeal, but I am uncertain as to whether or not to proceed with the appeal.

This State law, in my judgment, should be immediately repealed. It places a burden upon the profession which is out of proportion to the benefits to be derived by the public because the law is directed against that very small percentage of doctors who have prostituted their profession by selling various forms of narcotics to patients and others, and unfortunately places the great mass of the medical profession in the same class with these few creatures who are willing to barter their own moral sense in return for the few dollars they can get from the unfortunately diseased persons, who, for one reason or another, have become addicts of the drug habit.

I am frank to say that the legislation referring to the purchase, registration and dispensation of morphine, cocaine and other drugs as it now stands in this state should be repealed, that a statute similar to the one the United States Government has put in force should be adopted in its place, that the inferential criticism of every member of the medical profession should be done away with, and the honor of the profession relieved of its ban.

I think this matter should be given utmost publicity.

JAMES TAYLOR LEWIS.



Etiological Factors of Acne Vulgaris.—Strickler, in his article in the *Amer. Jour. of Med. Science* (Oct., 1917), gives the following conclusions: If we should be asked what in our opinion is the cause of acne vulgaris we would answer that acne is a complex disease, with a great many factors to be considered.

1. Acne is due, in our belief, in the vast majority of instances, to the acne bacillus.

2. That this organism is probably normally present on the skin of individuals not subject to acne, but in those individuals who develop

the disease, the acne bacillus is activated by other factors.

3. The activating factors are in a certain percentage of cases either the colon bacillus or its toxins, or both, as shown by the complement-fixation test and in a lesser degree by the staphylococcus or by both bacteria acting in conjunction.

4. To further substantiate the role of the colon organism in acne we have the indol experiments, which seem to indicate some variation in the behavior of the colon acne organism from that of our normal controls. These indol experiments are, of course, only suggestive.

5. It must be recognized that there are cases of acne due either to internal administration of certain remedies or to certain local applications.

6. We noticed in a certain percentage of patients an increase in the size of the thyroid gland. The exact significance of this fact cannot be definitely stated. Some writers are of the belief that an increase in the size of this gland is an indication of intestinal toxemia.

7. It is our belief that the use of cosmetics plays a role in the increase of this affection.

8. From our studies we do not see any relation between food anaphylaxis and acne vulgaris.

9. That among other factors puberty plays an important predisposing role.

10. Among other predisposing factors, seborrhea, anemia, derangement of the stomach, nervousness and pelvic disease play a role of greater or lesser importance, but we feel that these never play the role as an exciting factor.

The Turning Test in Appendicitis.—Blaisdell (*The Archives of Diagnosis*, July, 1917) believes this test to be original with him, having employed it for the past twelve or fourteen years. If it is not original it is a tale that bears telling twice.

When you enter a room where there is a case of suspected appendicular trouble you will rarely, if ever, be the attack acute or otherwise, find the patient lying on the left side. He will almost always be lying on his back or on the right side. You ask him why he lies on his back or right side and he replies that it hurts him when he turns on the left side. That was the first thing which made me ask "Why is that?" Since that time it has always been my procedure to use this turning test and in ninety per cent. of all appendicular troubles, or those involving an inflammatory condition of the appendix, the pain is increased when the patient is turned to the left and diminished when he is turned back on his right side. The pain is not so intense when the patient is on his back as on the left side. If every other symptom is absent, Blaisdell always advises operation if that test is marked and in over ninety per cent. of my cases it has proved to be correct.

In making the test the abdomen must not be allowed to touch the bed, thereby allowing the

viscera no support when it pulls to the left and drags along the sensitive appendix thereby causing additional pain. With a rapid pulse, with or without temperature, and the turning test present, operate.

Nephritis from the Standpoint of Urea Excretion.—McLean reports (*Journal American Medical Association*, Aug. 11, 1917) that nephritis, and particularly the form known as chronic interstitial nephritis, associated with alternations in the excretion of nitrogenous waste products, especially urea, has long been known.

A change in nitrogen intake was always followed quickly by a change in the concentration of urea in the blood and in nitrogen output, so that nitrogen balance was reestablished on the new level.

Urea retention in the sense of a relatively increased concentration is the result of increased resistance to the excretion of urea thru the kidneys.

The relatively increased concentration of urea in the blood overcomes the increased resistance to excretion and the organism is thereby maintained in nitrogenous equilibrium.

The occurrence of a high concentration in the blood is not necessarily accompanied by any symptoms suggestive of uremia.



Bedsore.—To avoid bedsore suitable hygienic measures should be applied. Patches of beginning redness should be painted with phenolated oil and more advanced lesions, after drying, dusted with

R Cinchonae 100 grams
Bismuthi subgallatis 10 grams
Benzoini 5 grams
Misce et fac pulverem.—*Paris Medical*.

The Use of Lactic Acid Bacilli Milk for Children.—McClanahan (*Pediatrics*, July, 1917) states that sour milk should always be made from either pasteurized or certified milk. The only change in the milk was the conversion of a certain amount of milk sugar into lactic acid. It was necessary that the living bacillus *Bulgaricus* should be present in the milk. He had been using lactic acid milk for the last seven years and had been using lactic acid tablets of a standard make, one tablet dissolved in a tablespoonful of water and stirred into one quart of milk in a clean glass jar or pitcher. This was

kept at room temperature for twenty-four hours. In using skimmed milk it should be pasteurized before it was inoculated. If the sour milk was pasteurized the lactic acid bacilli were killed, and then one was giving nothing but lactic acid milk. In the writer's experience lactic acid milk had been useful in two groups of patients: First, in infants convalescing from intestinal infections, chiefly thru the summer months; second, in cases in which sour milk had been badly fed and had chronic intestinal indigestion, or in those children who were recovering from acute disease, such as pneumonia, nephritis, typhoid fever or those having a milk idiosyncrasy. If there was difficulty in getting the child to take the sour milk, it might be due to the difficulty with which the milk comes thru the nipple, and in that case several holes should be made in the nipple with a needle heated to white heat. If the child refused to take the sour milk it might be fed by gavage until it becomes accustomed to it.

Amebic Dysentery.—Intestinal infection is surprisingly widespread, altho it is more severe and more frequent in the tropics and subtropics. It seems to be purely endemic in form. McQuire, in the *Ill. Med. Jour.* (Mar., 1917), points out that infection seems to be thru carriers—such as man, the rat, etc., contaminated water supply, and fresh fruits and vegetables grown on polluted soil.

The amebae now recognized are *Entameba coli*, apparently a harmless commensal, and *Entameba histolytica*, the pathogenic form. *E. coli* is 10-20 micron in diameter when free, grayish in color, spheroidal, sluggish, and has a distinct nucleus and only one vacuole. *E. histolytica* is larger, irregular, greenish-yellow, and has an indistinct nucleus and many vacuoles. Amebic cysts, containing spores, enter at the mouth and pass to the large intestine where the enzymic action, caused by metabolic products of *E. histolytica*, produces necrosis of the tissues, chiefly in the rectum and below the ileocecal valve.

The acute type has an abrupt onset and is characterized by severe abdominal pain, tenesmus, anorexia, nausea, vomiting, and as many as thirty stools a day, in which are found blood, mucus, leucocytes, amebae, bacteria and necrotic material. In a week or ten days the temperature falls to normal and the pain abates, which indicates either convalescence or gangrene.

Chronic dysentery may follow an acute attack or start insidiously, having alternate diarrhea and constipation, with amebae in the stools. It causes slow emaciation or gangrene.

Latent dysentery has none of the characteristic symptoms but amebae in the stools. However, it may lead to liver abscess and such people are carriers.

Mixed infections of amebic and bacillary dysenteries are characterized by numerous motions, fever, nausea, vomiting, and great constitutional disturbance. They are usually fatal.

Important sequelae are gangrene, hepatic abscess, hemorrhage, peritonitic adhesions and

constriction of the lumen of the bowel.

The patient should be placed at rest, in bed, and a sedative suppository given to relieve the pain. After this a dose of castor oil, and then the emetin or ipecac treatment. This consists of a hypodermic injection three times a day for two or three days of $\frac{1}{3}$ to $\frac{1}{2}$ grains of emetin hydrochloride, or ipecac in 5 grain doses every 3 or 6 hours. When the acute symptoms have

uniformly good results. Within a very few days (and at times, almost immediately) the evidences of spasm are markedly relieved or entirely disappear. It is an easy matter, however, to excite them again by any relaxation of the treatment within a period of two weeks. This is probably due in part to the influence of habit as it applies to neurotic infants in particular.



[Copyrighted by International Film Service]

BRITISH MILITARY FIRST AID HOSPITAL NEAR BATTLEFIELD.

passed, dilute tannic acid should be used as an irrigant.

Cardiospasm in Infancy.—In the treatment of this distressing condition, Le Grand Keer (*Archives of Diagnosis*, July, 1917) experienced

The first consideration in successful treatment is to secure the adequate rest for the infant. For a period of two weeks, the baby must be kept in a quiet, well ventilated room, with one attendant, no visitors and no family. Usually because of their recent discomfort these infants have been coddled, handled, excited by

attempts at amusement and otherwise maltreated. A room at the top of the house capable of proper ventilation is best and the furnishings should be such that quiet may be maintained. Always have the legs of the chair cushioned and the feet of the attendant slipped.

The food should be sufficient for the particular infant's needs, but if possible the bulk should be reduced.

The hours of feeding should be lengthened whenever practical.

It is sometimes advisable to give a food that is partly predigested.

Extremes in the temperature at which the food is given must be avoided.

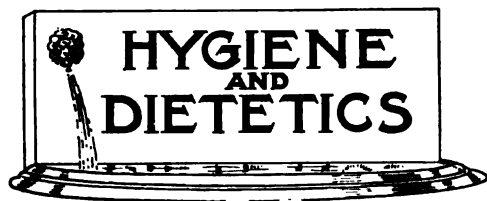
If beef blood or fruit juices have been a part of the diet they must be discontinued for the time.

At the time of feeding, and for fifteen minutes before and after, the room should be somewhat darkened while the baby lies in its crib.

In the cases that show a tendency not to yield promptly, it is advisable to begin the feeding with a medicine dropper, or better still with one of the feeders made especially for premature infants.

With such an apparatus, the rapidity with which the food is taken can be easily regulated and the effort of taking reduced.

The bromides and belladonna judiciously given are valuable adjuncts to the treatment, but the best results are obtained by an adequate adjustment of the food and the manner of its being taken and the complete subjection of the family and friends to the baby's interests.



Dietary in Hyperacidity.—Boos, in a recent issue of the *Boston Medical and Surgical Journal*, recommends the following diet:

Breakfast, 7.30 a. m.: Baked apple with cream; eggs, boiled, poached, on toast, shirred or scrambled; grilled bacon; steak or chop; Bensdorp's cocoa; occasionally one cup of coffee with much milk; buttered toast or crisp rolls.

10 a. m.: A glass of good, rich milk with bread and butter or zwieback.

Luncheon, 1 p. m.: Boiled rice or farina with cream or milk; a cup of custard or milk toast; crackers with milk; green vegetables with mashed or baked potatoes; macaroni cooked with cheese; spaghetti; broiled, creamed, baked or boiled fish (no mackerel, salmon or bluefish); occasionally cold meats; potatoes baked in their jackets with parmesan cheese; fish chowder; oyster stew. With any of these luncheon dishes, bread and butter or buttered

toast. Daily, baked apple with cream, stewed prunes or apricots, apple sauce.

4 p. m.: A glass of good, rich milk with bread and butter or zwieback.

Dinner, 6.30 p. m.: Oysters on the half shell, from November 1 to March 31, only; no clear soups, but cream and thick soups; chowders (except clam chowder). Fish: As at luncheon. Meat: Fowl, game, veal, beef (rare), steak (rare), lamb, very mild ham. The meats should be prepared in simple style, without fancy sauces and without spices. They should be roasted, broiled, stewed, pot roasted. Tender boiled beef and fowl are allowable. Vegetables: Young carrots, peas, beans, cauliflower, mashed turnip, asparagus tips, squash, summer squash, spinach in French style, lettuce, cooked like the spinach (very delicate), egg plant (not fried), oyster plant (not fried). Vegetables should be cooked with plenty of butter. When fresh vegetables are not available, the good brands of canned vegetables form a perfect substitute. Potatoes: Baked, boiled, au gratin, mashed, creamed, Delmonico. Macaroni, rice, spaghetti, noodles. Green salads with plenty of oil and little vinegar. Weak tea. Soft crackers and a little mild cheese. Puddings are allowed, except plum, suet, steamed or any other heavy puddings. Fruit and wine jellies are allowed; also ice cream, but you must eat this very slowly, melting it in the mouth. No pies, pastry or fritters.

9 p. m.: A glass of good, rich milk.

In General: No raw or fried onions, no radishes, garlic, horseradish, ketchup, chutney, Worcestershire sauce, pickles, curry, olives, mustard. Avoid hot or fresh bread. Do not eat fried or salty food, but use just enough salt in your food to make it palatable, no more. Little or no sugar in your food. No candy. Rest for a half hour or longer after each main meal of the day, lying on your right side. Take regular exercise, such as walking, swimming, doubles in tennis, golf, horseback riding, bowling (in winter).

Eat slowly. Chew your food well. Go to bed early. Do not read novels at night. Stop worrying. Keep your bowels regular. Take a tepid sponge bath in the morning.

Value of Oranges.—As a food in fever cases, nothing could be more perfectly suited to requirements of the patient's condition, as stated in *Good Health*. The fever patient needs water to carry off poisons which are burning him up and against which his cells and organs are struggling. Four to six quarts of water are needed daily to quench the fever's fires and aid the elimination thru the skin and kidneys.

Orange juice supplies the finest sort of pure, distilled water, absolutely free from germs or foreign matters of any sort. The grateful acids furnish aid in satisfying thirst, and the agreeable flavor makes it possible for the patient to swallow the amount needed. The intense toxemia from which the fever patient suffers coats his tongue and often destroys his thirst for water as well as his desire for food. The

agreeable flavor of orange juice aids greatly in overcoming this obstacle.

Another special and valuable property of orange juice is the small amount of protein or albuminous matter which it contains. Fever patients have little gastric juice and very small digestive power, and so need to take food which is ready for absorption and immediate use. Foods poor in albumen are also needful in fevers because they do not leave residues to undergo putrefaction in the colon, as do meat, eggs and numerous other foods.

Orange juice contains less than one per cent.

sterilized milk, these unhappy little ones seldom fail to show marked evidence of malnutrition. They are, indeed, not infrequently victims of scurvy, rickets or pellagra. The investigation of Funk, McCollum and many others have shown that the emaciation, weakness, arrest of growth and general malnutrition in such cases is due to absence from their food of the essential "vitamines."

A few years ago, the fortunate discovery was made that orange juice contains elements needed to supplement the bottle-fed baby's dietary, resulting in immediate resumption of



[Photo by International Film Service]

AMERICAN SURGEONS AND NURSES ARE BRINGING BACK HIS HEALTH.

This wounded poilu, with both arms and legs fractured is being brought back to health by the American surgeons and nurses in the famous American Hospital in Paris. In the picture can be seen the drainer invented by Dr. Alexis Carrel.

of protein or albumen, so that a patient may take three or four quarts of the juice without getting an excess of material which may easily become a source of great injury.

Two quarts of orange juice combined with an equal amount of barley, oatmeal or corn gruel makes an ideal food for a patient battling with typhoid fever.

Another class of cases in which orange juice is almost indispensable is found in those most unfortunate and suffering of mortals—the bottle-fed babies. Usually fed on pasteurized or

growth and a speedy return to health. This remarkable transformation may occur, not only in human infants, but in young animals upon whom the orange juice feeding experiment has been oft repeated.

Every infant fed on sterilized milk or artificial infant foods, in fact, every infant fed from a nursing bottle and older children who are not doing well should receive daily not less than four ounces of orange juice to supply necessary vitamins.

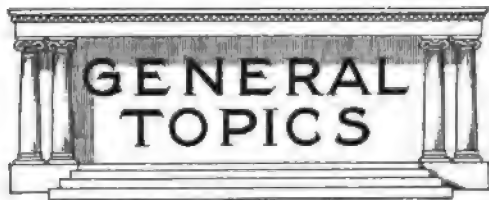
The diet of the average man, made up

chiefly of white bread, meat and potatoes, is decidedly deficient in vitamins. Orange juice is needed to supplement these defective dietaries and might, with the greatest advantage, find a place on every table at least once a day.

The acid of orange juice and the sugars it contains aid digestion by stimulating the gastric glands to increased activity. It is also an appetizer of the first quality.

A glassful of orange juice before breakfast has a decided laxative effect with many persons. Sometimes it is advantageous to take a glassful of orange juice at bedtime as well as in the morning.

On the whole, oranges are probably capable of serving more useful purposes in the economy of the body than any other fruit. As people become better educated in dietetics, oranges will be more and more appreciated and more freely used. They are one of the most perfect and most useful of all fruits. Every man who has a good orange grove in a favored locality has treasure equal to a gold mine.



Oiled Gauze.—Sollmann (*Journal A. M. A.*, September 29, 1917) conducted a series of experiments with oiled gauze enclosing cotton sponges with a view to determining its usefulness in wound dressing. He found that loose mesh gauze, impregnated with liquid petrolatum by dipping into the petrolatum and expressing the excess, permitted much better absorption of the enclosed cotton sponges for viscid fluids than unimpregnated gauze. Gauze impregnated with Fisher's paraffin mixture does not absorb as well as plain gauze. If the cotton sponge contained in the gauze is compressed, absorption is better than if it is loose, and it is even better in the compressed cotton if the layers of the cotton are parallel to the surface from which they are to absorb. The impregnation of gauze with petrolatum aids absorption of viscid fluids by protecting the fibres from wetting and swelling with the obstruction of the mesh.

The Use of the Term Hysteria.—Solomon, in the *N. Y. Med. Jour.* (Sept. 15, 1917), points out the reasons why the term hysteria should be abolished. He says that hysteria as a word is etymologically unscientific when applied to any of the phenomena which have been classified under this name, since it harks back to the days when the uterus was incriminated as the cause. It recalls the days when hysteria was synonymous with simulation. It must be dis-

carded because of the heterogeneous clinical group of manifestations in the purely psychological sphere and in the sphere of the voluntary and involuntary nervous systems which have been packed into this group. No unanimity or agreement can be reached as to the delimitation of the clinical concept to be given this name. It would seem therefore that there is no way out of the dilemma other than to do away with the term once for all. The writer then proceeds to a disintegration and arrangement of the conditions hitherto massed together by different students of this problem. He finds that these disorders are usually in one or more of four spheres. These are: 1. Ideational processes. 2. The feelings with their specific attitudes. 3. Disturbance of the voluntary sensorimotor nervous system. 4. Disorders of the involuntary sensorimotor and vegetative nervous system. One must be able to exclude all possible causes except emotional shock and trauma before attributing the disorders under consideration to emotogenetic factors. The writer claims that his classification means that in all cases of so-called hysteria one must make a careful investigation as to the possible mental state of the person presenting the symptoms, and as to the genetic factor or factors responsible for the evocation of the particular picture which is to be diagnosed. Of course, there may be a combination of two or more of these types of reaction in the same person.

Scabies, as seen among soldiers, according to MacCormac and Small in *Medical Record* (Oct. 27, 1917), differs in type from that usually met with in civil practice, and the difference must be appreciated in order to recognize "carriers." The eruption is distributed in much the usual fashion, that is, on the wrists, hands, penis, lower abdomen, anterior axillary borders, elbows and buttocks. The characteristic interdigital burrows, however, are rarely seen. They were typically present in only 13 per cent. of their cases. Vesicles are much more common, tho in many cases the hands are entirely free from lesions of any sort. A correct diagnosis can only be made after inspection of the whole body. In the majority of cases the penis is involved, and the discovery of papules or crusts on either skin or mucous membrane is almost pathognomonic. This serves in doubtful cases to distinguish scabies from the acute pediculosis so frequently seen, and is, for this reason, an extremely useful diagnostic sign.

Disinfection of clothing and bedding must never be omitted.

Sulphur, it is generally acknowledged, is the most efficient remedy for treatment, and certainly, by reason of its curability and cheapness, it is that most suited for the extensive requirements of an army. Admirable results will invariably follow if the treatment is conscientiously carried out and with due regard to the necessary details. The method of application is of paramount importance. They outline it as follows:

On first day, patient is given a hot bath and

provided with plenty of soft soap and a large, moderately stiff nail brush. (a) Before entering the bath he is lathered all over with the soap, massaging it into the skin, paying particular attention to the special parts affected. This should be continued for at least ten minutes. (b) He then enters the bath, where he should be immersed to the neck. After steeping for fifteen minutes a thoro scrubbing with the nail brush follows. After the bath a final inspection is made, and any unruptured vesicles opened with a surgical needle. The object of this bath is to open up the haunts

applications in all. It is obvious that all clothing must be removed for the treatments.

Finally, on the fourth day, and not before, a second bath is given, and all of the patient's clothing and bedding sterilized to prevent reinfection. Everything, such as wrist straps, strings of identity discs, etc., should be included. The majority of cases where the treatment has been thoroly carried out will be cured after three such days of treatment. Should any doubt exist, 2 per cent. betanaphthol in vaseline may be used daily for four more days. Only under exceptional circumstances should sulphur



[Photo by International Film Service]

RECLAIMING WAR SHATTERED BODIES IN AMERICAN HOSPITAL IN PARIS.

The picture shows a general view of the big ward in the famous American Hospital in Paris, where Dr. Blake, Dr. Carrel and other American surgeons are reclaiming the shattered bodies of wounded French soldiers. The picture shows many of the clever pieces of apparatus used for fractured legs and arms.

of the acarus and to expose it to the action of the parasiticide to follow. Shower or steam baths do not do this.

After removal of the soap, and drying, a liberal quantity of sulphur ointment (B. P.) is provided, with which the patient rubs himself vigorously all over, from the neck downward, special attention being paid to the vulnerable areas. When finished, he should be literally soaking in it. The inunction is to be repeated in this manner twice daily for three days, six

ointment be applied for more than three days, on account of danger of dermatitis following. At the completion of the treatment a certain amount of itching may be present; this is due to the remedy, and is not indicative of failure of cure; it will pass off, and should be disregarded. Some days will also probably elapse before all of the lesions have disappeared, altho the man is no longer infective. A certain degree of pigmentation may persist indefinitely.

American Medicine

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In Advance

The Achievements of the American Nation During the Past Eight Months.—It is difficult to understand how any fair-minded, intelligent person can consider all that has been accomplished since war was declared—and of course, there is much not known to the general public—without being astounded at the achievements of those who have put their “shoulder to the wheel” in the effort to prepare the country for the struggle before it. No maudlin flattery or sensational praise is intended, but if there is an American citizen who can view the things that have been done in the past seven or eight months and not have his heart throb with pride and admiration for the American people, he is lacking either in patriotism, or comprehensive appreciation of the magnitude of the problem that was presented for solution.

Mistakes have been made? Delays have occurred? Of course, and in heaven's name, why not? Is there any rational being who can conceive of the expansion of an army from 100,000 to 2,000,000 men, of providing accommodations and equipment for this increase, of marshaling the resources of a country as large as America, in fact, of mobilizing a nation of 100,000,000 people, without mistakes? The individual who will stop and allow his common sense to work, will wonder, not that mistakes have been made, or that delays have occurred, but that these in the face of

unavoidable circumstances have been so few. When the carping critics, the pessimists, the traitors and other secret enemies spread their poison by condemning and belittling what America has done—and is doing—it is well for those of us who love our country, and can appreciate earnest, faithful work, to spend a moment in considering some of the remarkable things that have been achieved since last April. For example, the American Navy has been developed to proportions—and a state of efficiency—that make it second only to that of Great Britain. A fleet of destroyers and other light craft has been operating in the war zone for some months, with results that the British—who know whereof they speak—have been quick to commend. That this fleet has given material aid in solving the submarine problem is freely conceded. Our military forces have been developed almost beyond comprehension, when one takes into consideration that America has never been a military nation, and that our available army when war was declared did not number over 100,000 men. That size for size it was the most efficient military organization in the world, according to competent British authorities, has been a great factor in the development of our present army, but it is numbers as well as efficiency that is required today, and in building up from civilian material the military forces we now can claim, our nation has accomplished re-

sults that a few years ago would have been deemed absolutely impossible. But it has been done, and an army is being created that will do its full part in saving the world. The collapse of Russia unquestionably makes this part much more important and urgent, but those who are inclined to magnify the increased burden imposed by the "laying down" of Russia, should derive much satisfaction from a comparison of the American soldier with the Russian. The Russian is ignorant to a degree, with all the faults of his ignorance. Under certain conditions he is a splendid fighter. But remove these conditions and he is worthless. This has been proven a hundred times during the present war. Obviously, the foregoing does not apply to the educated Russian officer, for his education removes the factor that makes the Russian private soldier unreliable. The average American soldier is as well—and often better—educated than the average Russian officer. In intelligence, resourcefulness and ability to meet emergencies, the American soldier is infinitely superior to the Russian private soldier. The same can be said of the British and French soldiers. Consequently, an English, a French or an American soldier as a dependable, resourceful fighter under all circumstances, is worth five Russian soldiers. Our American Army, therefore, will need only 1,000,000 extra men to make up for the defection of Russia.

Another gratifying detail of America's military preparations has been the prompt placing of American troops in France. For obvious reasons, specific facts concerning this first contingent cannot be given, but it is known that for some time a fully equipped American Army has been on French soil, undergoing intensive training. While its numbers cannot be given, it is

known to have reached proportions that may at any time have a very pronounced effect on the situation. All these men, with their equipment and paraphernalia, have been transported from America to France, without the loss to date of a soldier. Officered by magnificent men, and given the advantage of the experience of the best British and French officers, our Army in France will soon give an account of itself in ways that will leave no doubt of its fighting qualities.

A word should be said of the other forces America is contributing to the Allied cause—the marines, the special engineering regiments, the ambulance corps, the large number of aviators, the medical men, and the many other groups of highly trained and skilled workers whose services are so appreciated. Finally, there are the countless humanitarian agencies—Red Cross, Y. M. C. A., Knights of Columbus, and so on—thru which this country has contributed to the common cause. How much these have meant to those in many lands—even in enemy countries—on whom the heavy burden of war has fallen may never be known, but when this cruel war is over the American people will have no need to apologize for the extent of their sympathy, or the quality and depth of its expression.

Next, some thought should be given to the financial undertakings of the country. Prosperous and wealthy as we were, no one can say that the nation was not ready and willing to throw its wondrous resources into the common pool for saving mankind from the menace of a soulless autocracy. Millions—billions have been placed at the disposal of the Allied nations whose resources have been depleted. Thru two great Liberty Loans, the American people have come forward with six billion dollars, and

enthusiastically demonstrated not only their faith and confidence in the American government, but their belief in the righteousness of the struggle for democracy.

Congress, aside from one or two discordant notes, struck by a few unimportant elements, has justified its best traditions, and subordinated every interest to the needs of the country. Right loyally have our lawmakers cooperated with the other branches of our government. Indeed, one of the finest features of our national life has been the splendid evidence of real, whole-souled patriotism that every government official has shown. President Wilson has been a leader the nation has been proud to follow, and not the least of what America has contributed to the Allied cause has been the clear interpretation of our problems, together with the exposition of our national ideals and purposes, which he has given to the world thru his masterly state papers.

Space precludes more than simple mention of the progress that has been made in mobilizing the economic resources of the country. The food, fuel, transportation and many other problems that have arisen are gradually being solved, not alone to increase the efficiency of our war efforts, and for the good of the country, but also—and this can be said with an earnest belief in the true humanitarianism of the American people—for the higher, nobler purpose of being able to render the greatest possible aid to other nations, and their sorrow laden people.

Summed up, therefore, America has every reason to feel that those who have been directing the destinies of the nation have done well. They have "kept the faith"—they have "fought a good fight." If some mistakes have been made, and some shortcomings have been apparent, let us be

grateful these have been so few. Face to face with problems equally large and equally difficult, surely no other group of men could have made less mistakes—many would have made more. If some things are still undone that we wish had been done, let us be fair and decent enough to put the blame squarely on the complacency and indifference which we were guilty of during the fateful years just preceding the war. We had ample warning, but chose to disregard it, or to allow our fears to be lulled by the fatuous belief that our resources would make instant preparation easily possible. If we overlooked that we live in a real democracy, that our officials are bound by the chains of limited authority and restricted responsibility—that they are answerable for every act—let us be big enough to admit our own dereliction and our own shortsightedness. In assuming full blame for our supineness and neglect, however, let us not ignore or be blind to what has been done, the splendid response the American people have made, or, above all, to the lessons we have learned.

Should anyone wonder why a medical journal, going to physicians exclusively, has seen fit to discuss matters so foreign apparently to the problems of medicine, we would respectfully point out that the doctor is first of all a citizen, deeply interested in everything pertaining to the country or the welfare of the people. No class of men must play—or has played—a more active part in the present war. For this reason, and many others, no class of men needs to keep more thoroly and accurately posted on the nation's relation to the war than do the doctors; in the last analysis it is the paramount question to every American citizen today.

But the reason above all others why we

have taken up the nation's achievements, during the past eight months, is that no man comes in as close or intimate contact with so many people as the practitioner of medicine. No man has such splendid opportunities to nail a lie, or counteract seditious propaganda, as the family physician. We all know that a well organized and well planned movement is striving to create dissatisfaction, distrust and a general spirit of pessimism toward the war and everything pertaining to its conduct. Believing that no true, loyal American should neglect any opportunity of counteracting every attempt to embarrass and weaken the efforts of those who are directing the nation's affairs and striving to win the war, we have felt it a duty to discuss the situation as we see it. The hour thru which the American people are passing is a serious one—probably the most serious in all our history. We owe it to those who are doing their best while carrying enormous burdens of responsibility to let them know that their faithful efforts and untiring labors are appreciated. Mistakes should be avoided, if possible, but no one is infallible. The late Minister to England, Edward V. Phelps, used to say "the man who never made a mistake, never made anything." The best men make mistakes, but they do not make the same mistake twice. We are convinced that there is no man whose vision is clearer, whose patriotism is finer or who can do more to foster the spirit of optimism in the American home than the American doctor. Keen observer and shrewd analyst of affairs that he is, there is little danger of his being led astray by false prophets or vicious propaganda. But with the true situation before him, he will be better able to supply a potent antidote for the poisons of the pessimists. In

other words, instead of doubt, dissatisfaction and depression holding sway, with their inevitable lowering of the public morale, the doctor, whose viewpoint is rational and right, will be better prepared to fulfill his mission of helping to keep not only the bodies of the people healthy, but their minds as well.

Food Prices.—The high cost of living is felt more keenly during the holiday season which, in the minds of most persons, is associated with feasting and rejoicing. The general tendency of food conservationists is to relegate unnecessary spreads into the background for the period of war. While the psychic effect of heavily laden tables possesses no mean advantage, it is economically wasteful and hygienically unwise to concentrate one's efforts to secure food for a few extra bounteous meals.

The cost of foods at the present time is exceedingly high. According to the United States Bureau of Labor Statistics the retail prices of food in Feb., 1917 had an index of 1.62 as compared with a standard of 1.00 in 1907. This marked increase in the cost of foodstuffs would be less serious had wages risen in the same proportion. Assuming the food prices of 1912 as 1.00 the cost of the same foods during 1916 was represented by 1.20. For the same periods the indexes for wages were 1.00 and 1.09. This is indicative of the real difficulty of the high cost of living: the rate of wage increase has not kept pace with the rise in food prices.

It is true that in numerous occupations specifically related to the manufacture of

commodities essential for war purposes, the worker has succeeded in securing a wage scale more nearly compatible with that required to meet the general upward trend of the necessities of life.

Foreign experience has indicated that the problem of feeding the masses is of the utmost importance not merely for promoting economic peace, but for maintaining the general health of communities. In order to conserve the health and safety of the general population, governments have been obliged to arrange a system of food subsidies to enable the working people to secure the essential foodstuffs at a price within the range of their financial resources.

The United States now is charged with the responsibility of feeding the world, and every patriotic citizen feels the necessity of self denial and the readjustment of dietaries with a view to freeing foodstuffs for the benefit of those large portions of humanity who are at or near the starvation line. It is incumbent upon this government, however, in its process of saving the world from a food shortage, to protect its own citizens from the danger of arriving at a state of under-nourishment in the midst of an adequate supply of food which cannot be secured because of a lack of means to make the necessary purchases.

The importance of protecting children against a lack of those types of foods most necessary to building up healthy childhood cannot be neglected. Efforts must be made to keep down the prices of milk, bread, butter, eggs and cereals so that childhood will not be robbed of health as a result of malnutrition.

During times of peace the degree of malnutrition in this country among children

was estimated at approximately twenty-five per cent. These figures are regrettably high and should be reduced despite the fact that a state of war exists. The promise of the future strength and power of the country lies in the growing generation which must have food, shelter and clothing even tho vast changes in governmental policy may be necessary. With the tremendous crops which exist, with an abundance of cereals, vegetables, fruits and meats, with the increased acreage devoted to production, and with the more intensive cultivation in every line, the food power of this country is greater than it has ever been in its history.

With the belief that the entire nation is participating in war it follows that the health and welfare of the entire nation must be recognized as an essential phase of governmental policy. Food hoarding must not be permitted; profiteering must cease. If the government can conscript men and women for the preservation of national life, it can likewise take over the food supply and subject it to the regulations necessary to insure adequate food arrangements for the soldiers in civil and industrial life.

The cry of paternalism is no longer to be regarded as a cry of danger in the midst of an impending national calamity. The assumption of complete power and control over large necessities appears to be necessary for promoting national safety. The accomplishments that have been wrought in the fields of industry are remarkable and commendable but were made possible by rigorous governmental action looking towards the harmonization of industrial effort.

It may not be possible to overturn the economic principles which have guided so-

ciety in order to effect a rise in wages equal to the increased cost of all articles utilized by the general public. The satisfaction of the hunger of the nation is fundamental in protecting its health and keeping up its resistance to disease. For this reason, more than a publicity campaign is necessary to point out the types of foods in which savings should be effected. The change from one foodstuff which has been plentiful, to another which has been less frequently used, raises the price of the latter commodity unless price regulation is practiced with the utmost diligence and care. A standardized war bread is imperative, but no less imperative is a fixed maximum price for a fixed quantity of bread. Bread lines are to be feared if their causes are not anticipated and made inactive.

The problem of food conservation cannot be dissociated from the question of health conservation. Increased malnutrition must be fought as seriously and effectively as would an enemy invasion. To permit the national health to suffer in this time of crisis would be a short-sighted policy and would visit as serious a loss upon the nation as can be imagined. As far as this country is concerned, there is really no food shortage, nor must there be a health shortage because of the high cost of foods as a result of an inadequate policy of food conservation. The price of health is of greater significance than the price of foods.

The Value of Education.—The value of education is recognized in the broadening of human life, the cultural benefits of contact with the world's civilization and preparation for effective citizenship. No single element is more essential for the de-

velopment and maintenance of democratic institutions than the general education of the population.

It is practically impossible to measure the personal satisfaction, pleasure and joy of living, which accrues to an individual as a result of educational advantages. The educated man is a greater asset to the community than a large group of individuals who are illiterate.

The entire development of hospitals, modern medicine and surgery is dependent upon an educational background whose breadth and depth becomes increasingly great as the necessity for more intensive education becomes apparent. The tendency to raise the educational standards among medical men is representative of the spirit of progressiveness which places the practice of medicine among the liberal professions. The educated brain and hand are vital tools with which to till the fertile soil wherein have been planted the seeds of human advancement. For those who can see the worth of education only in terms of financial reward, there is a vast amount of suggestion and thought in *Bulletin of the United States Bureau of Education, No. 22*, entitled "The Money Value of Education," by A. Caswell Ellis. Education pays the state, because thru it the productive power of the citizens is increased.

Every dollar expended on public education increases the economic value of those who receive the benefit of the school training. That the public is not slow in granting a reward to those who have attained success based upon sound educational preparation is manifest by a study of "Who's Who in America." The individual with a college education has eight hundred times more chance of successful achievement in life than those who

have been deprived of the opportunity of a schooling. It is significant that while less than one per cent. of American men are college graduates, this small group of college graduates has furnished to the nation 55 per cent. of its Presidents, 54 per cent. of the Vice-Presidents, 62 per cent. of the Secretaries of State, 50 per cent. of the Secretaries of Treasury, 67 per cent. of the Attorneys-General, 69 per cent. of the Justices of the Supreme Court, 36 per cent. of the Members in Congress and 47 per cent. of the Speakers of the House. Distinctions of this character must naturally be limited to a small number of individuals in each generation.

The financial rewards form a popular measure of success and it is, therefore, noteworthy that the unschooled laborer may be represented as having a financial value of 10,200 dollars, that is, his measure as the sum of money which at 5 per cent. interest would yield an income equal to his yearly wage or salary. The shop apprentice is valued at 15,800 dollars, the trade school graduate at 25,000 and the technical school graduate at 43,000 dollars. A large variety of figures carefully analyzed demonstrate that the more highly educated individuals are, the larger their salary rewards become. This increased payment to the individual is indicative of greater resourcefulness, efficiency and adaptability, all of which enable him to yield more efficient service to the state which has made his education possible.

"The educated mind is the greatest producing agency in the world." This superior earning power is also reflected in higher standards of living and increased vitality as a result of the ability to secure the essentials of life, to provide adequately for

a family, and to insure proper medical and nursing care in times of illness.

The fact that education pays is abundantly illustrated during a period of warfare where originality, ingenuity, initiative, concentration and application of intelligence and power are of paramount importance. The selective draft, which takes cognizance of the latent ability and potential resources of citizen soldiers, takes advantage of the benefits which have been conferred upon the nation thru the vast educational machinery of the country which costs over a half billion dollars annually.

It is of the utmost significance that America's method of attacking huge problems of health and public welfare is founded upon a sincere and firm belief in the educability of the general public. There is a vital message, growing out of a consideration of the value of education to the state, which must not be forgotten during the period of military stress. The educational institutions of the country must be conserved. The mantle of protection must be thrown around our higher institutions of learning. Technical schools in particular must not be permitted to fall off in the character of the work they aim to give students. Young men and women should be encouraged to continue their studies thru the secondary schools, and to enter into the higher institutions of learning as a contribution to national welfare. Adequate provision should be made to support technical schools whose funds are threatened by the unfortunate conditions arising out of the present war for democracy.

The medical profession is interested in maintaining its present high standards and, indeed, in raising them in the interest of the body politic. Modern warfare takes

advantage of the educational accomplishments of the past and should serve as a stimulus to a richer and more vital education in the future. Democratic institutions are enhanced in value, and the spirit of democracy is augmented thru the education of those upon whom the responsibility for future national progress and achievement must ultimately rest. It pays the nation to foster education; nor should the juggernaut of war be permitted to crush out the lives of educational institutions which have given strength, power and lofty ideals to the nation.

The Medical Adviser.—In the development of publicity work by municipal health departments extensive plans have been devised and executed with a view to the enlightenment of the masses. Thru the development of infant milk stations, an endeavor has been made to give direct instruction to mothers in the care of their children. Thru municipal clinics and visiting nurses, an unusual amount of attention has been devoted to the instruction in personal hygiene necessary to protect families from tuberculous and venereal infections. The tendency of organized medical agencies to advise citizens of matters of health has advanced with rapidity and effectiveness.

The advertisements in the current newspapers and periodicals point out the value attributed to such methods by a large variety of commercialized unethical practitioners and pseudo-medical exploiting concerns. It pays to advertise to cure the public of diseases, real or imagined, by means of drugs and appliances of doubtful therapeutic value. The free advice and the suggestion that all communications are

treated confidentially attract the attention of the innocent and unsuspecting, and the charlatan reaps a rich, tho undeserved, reward. It has been regarded as imperative to meet this form of advertisement by similar methods on the part of municipalities and states. With the intention of affording rational suggestions, advice and education, some states and cities have established free confidential bureaus under the auspices of their health departments which invite correspondence and personal visitation.

In *Social Hygiene*, October, 1917, Snow presents a tabulation of some of the forms of letters to, and answers from, the medical advisers of various health departments. The character of the communications demonstrate conclusively the advantage of this mode of attack upon the advertising specialists who offer advice without cost for the purpose of luring into their medical dens those who are suffering physically or mentally, and know not where to go.

A medical adviser in connection with a health department is no longer an experiment. The plan merits careful consideration, and without doubt will be deemed worthy of more general adoption. The purpose of this type of service is not to undertake the personal care or the treatment of those soliciting advice, but to guide the writers away from the quacks and into the hands of competent, trained and duly qualified practitioners. The fears of the young man are to be removed; the worries of the young woman are to be banished; the distress and anxieties of young and potential parents are to be allayed; and suspicion and doubt are to be met frankly and counteracted by forces that foster greater self-respect and self-control.

The medical adviser would necessarily

be a high type of social-minded physician with firm convictions on questions of ethics and morals, with a wide appreciation of the psychology of human beings and a sympathetic understanding of their strengths and their weaknesses. He needs to possess tact, consideration, enthusiasm and a pen that is dipped in the fountain of human grace and understanding.

In law, the necessity of a public defender has achieved a full discussion and has been recognized as a distinct step in advance. Similarly the advent of a medical adviser, under direction of health departments, will provide a new type of public defender. His function will be to protect the community from various assaults, now perpetrated by various types of parasites whose soulless exploitation of men, women and children has been responsible for much suffering, disability and despair.

Medical Educational Expansion.—The increasing study of dependents, delinquents and defectives is recognizedly advantageous to the organization of legislation or institutions for their protection or elimination. It is patent that a thoro investigation demands a large measure of high-grade field work, in order that the necessary data may be secured for analysis.

Until recently it was felt that any person with a modicum of intelligence and ample leisure could investigate satisfactorily the various problems requiring study. Experience has demonstrated that the ordinary volunteer investigator is poorly qualified to participate in painstaking investigations save under the constant direction and supervision of trained workers. The field worker has become a distinct type of social agent,

capable of undertaking researches in connection with inquiries into heredity and environment as affecting feeble-mindedness, criminology, insanity and various disease states. Owing to the very recent development of this new phase of social analysis, there have not been available standardized methods or forms for conducting investigations nor indeed have the necessary aptitudes of competent investigators been carefully tabulated.

It is obvious that precision, uniformity of work, refined measurements and a definite philosophy must be established in order to secure a mass of comparable facts and figures from which safe deductions may be made. The carefully trained research worker must possess tact, sympathy, a highly developed sense of humor, the powers of accurate observation, a special knowledge of psychology and the elementary facts of the medical sciences, in addition to a well-trained mind that is above the ordinary standards of the usual or average general education.

Research Work Along Social Lines.—Recognizing the importance of formulating rules and regulations for the guidance and development of research workers, the Bureau of Analysis and Investigation of the New York State Department of State and Alien Poor fostered the preparation of a manual (*Field Work Manual—Eugenics and Social Welfare Bulletin No. X*) to indicate the essential facts and methods to be sought and used by the official field workers of the State Department. From the standpoint of definite progress in systematization and harmonization of research along social lines, this manual marks a distinct advance, regardless of the many weaknesses which may be apparent to the

careful student. The main fact which must appeal to the thoughtful is that it represents an attempt to organize the essential problems which must be understood by social investigators, and is suggestive in pointing out the necessary qualifications of research workers together with a measure of the general character of this highly important vocation. A glance thru the table of contents with such chapter titles as alcoholism, syphilis, the ductless glands, rheumatism, cancer, rickets, hernia, etc., demonstrates the necessity and importance of a sound foundation in medical training, study and experience.

In view of the growing importance of various phases of medical facts in a large number of industries, it would appear to be desirable for medical institutions to appreciate their increased opportunities for definite service to the community. One portion of their educational policy should provide that the highly trained technical staff may be utilized in the giving of unit courses for training public servants along definite lines useful to the state. Medical colleges should be recognized as highly organized instrumentalities of education. Their use and functions should be expanded. Their allied hospitals and dispensaries should be employed for wider purposes in so far as is possible for the improvement of the minds and potential powers of those desiring to make legitimate use of specific training along one or more of the many phases of medical knowledge. There are many new developments in social activity which demand some medical training and experience. As physicians are unlikely to enter these vocations and occupations at the moderate salaries given, it would appear to be a sound policy of co-

operation for medical schools to take cognizance of these exceptional opportunities for benefiting the community.

It may be true that the professional teaching staff is not thoroly fitted for undertaking this phase of instruction, but this defect is easily remedied by the selection of the requisite type of instructors. The facilities for such work are available and failure to apply them is indicative of a lack of recognition of the value of this kind of educational work.

The numerous problems which war is developing and the responsibility for adequate preparation for reconstructive measures are calling for, and will demand, an increasingly large number of persons with some degree of technical training that does not involve a thoro grounding in the fundamentals of anatomy, chemistry, pathology and therapeutics. Unit courses in infant welfare, nervous and mental diseases, syphilis, contagious diseases and similar topics would be highly appreciated and undoubtedly prove to be popular and useful to a large number of persons who today are suffering from a lack of opportunity to secure such information, and thus are conducting their work without adequate preparation.

In the evolutions of society there are constantly arising new demands for specially trained workers in directions for which educational facilities have heretofore been lacking. Apparently the time has come for a revaluation of the social educational functions of medical institutions. The spirit of the university is greater than that of the college. The spirit of our medical colleges must be transformed, with a deeper and truer vision of their potentialities as medical universities.

The Registration of Communicable Diseases.—The problem of protecting mobilization camps and cantonments against communicable diseases requires the utmost care and consideration of health conditions in the areas surrounding and adjacent to military camps and cantonment zones. The occurrence of measles, pneumonia, mumps or meningitis is difficult to prevent while civilians visit the camps and furloughs enable soldiers to mix in with the civilian population in their immediate neighborhood. The possibility of controlling thousands of men so effectively as to limit their contacts with contagion bearers is beyond hope or expectation. Carriers of disease naturally exist in any group of a thousand men gathered together from different sections of the country. At the first appearance of an infection, the establishment of observation camps and the segregation and quarantine of the other members of the same company should follow without an instant's delay.

The United States Public Health Service fortunately is actively cooperating with states and municipalities with a view to securing and improving the protective legislation which is so essential for attaining and maintaining a higher standard of health and for establishing the maximum protection against communicable diseases.

Diphtheria, dysentery, malaria, pneumonia, septic sore throat, typhoid fever, whooping cough, scarlet fever and measles always present difficult problems during epidemics in times of peace. Their control demands extra efforts in the neighborhood of large groups of men living in an utterly strange environment and with a lack of physical preparation for the strenuous training and exposure they must undergo.

The increased hazard from these condi-

tions cannot be met nor is adequate control possible without an effective system of report and registration of every communicable disease, including those of venereal origin. Few quarantine or controlling regulations can be enforced unless the physicians give prompt notification of the existence of communicable diseases. The advantages to be derived by the establishment of ordinances dealing with the food supply, garbage disposal and segregation of infected persons are valueless without the basic knowledge involved in the registration of communicable diseases. It is of manifest importance that the extra-cantonment zones be placed under some measure of medico-military law in order that the fundamental sanitary rules and regulations requisite for the prevention of epidemics be rigidly enforced.

The laxity which has existed thruout the United States and the reactionary tendencies against notification must be opposed by some strong official enactment accompanied by penalizing clauses for failure to comply with prophylactic rules. The efficiency of the army must not be retarded thru any dereliction on the part of civil or medical groups in the community that have failed to realize that the health of the army is largely contingent upon the maintenance of the health of the non-military population.

In maintaining a satisfactory program for the protection of civil and military health, comparatively free from the invasion of epidemic diseases, compulsory notification forms the first and principal step. There can be no excuse for the failure of states and municipalities to take this step in advance in this emergency; its necessity is apparent; its application and enforcement are imperative.



The Problem of the Drug Addict.—The question of how to deal with the drug addict is one that has long exercised the minds, not only of various members of the medical profession, but of many intelligent and thoughtful citizens. The prevalence of drug addiction has become a public menace, and while in the past the scope of its evil effects may have been exaggerated, there is no doubt that the use of narcotic drugs has grown to alarming proportions in this country. The appointment of the Whitney Committee in New York was a most timely as well as commendable proceeding, and has been already productive of excellent results. Much valuable information has been gathered at its hearings, and it is to be hoped that thru its aid the matter will be so thoroly and comprehensively studied that a rational grasp of the whole question may result.

With regard to the prevalence of drug addiction, Mr. R. B. Sands of the Internal Revenue Department, who was a witness before the Committee on December 19th last, testified that there were about 300,000 drug addicts in the City of New York at the present time, the majority of them being among the so-called middle class people. He further said that most of the drugs were being handled by peddlers, and called the attention of the Committee to the fact that a number of these despicable wretches had penetrated into the military camps for the purpose of selling drugs to the soldiers.

It may be taken as well established, then, that drug addiction is unduly prevalent thruout the country; that it is not only a grave public question, but one that calls for the most earnest and sympathetic thought and investigation, if we are to learn the most effective means of curbing or stamping out the evil. In this connection it may be said, in the kindest spirit, that while

the present laws to prevent the promiscuous and indiscriminate sale of narcotic drugs, and the spread of drug addiction, were prepared and put into effect with the best of intentions, they are essentially imperfect and incomplete because they were written without adequate knowledge of the situation, or of the real nature and causes of drug addiction. It speaks well for the men responsible for this legislation that it is as good as it is, but before laws which so intimately concern the bodily and mental welfare of large classes of the community can be successfully framed and enforced, the conditions they assume to correct must be thoroly understood. In order to achieve this desirable end, we earnestly believe a state commission should be created to consist of three to five medical men and five to seven laymen, whose duty will be to investigate the situation from every conceivable angle, medical, sociologic and legal. The medical members should be men of broad training and experience in medicine, and capable of carrying out an investigation of the problem of drug addiction in ways as thoro as those of the British medical commissions in England, which have done so much to clear up many obscure points in medicine and surgery.

Such an inquiry, with adequate facilities, will be able to ascertain the true pathology of drug addiction, study the present methods of treatment, and give to the world definite and dependable information as to the control and cure of this disease. The lay members of this commission, two of whom should be women for obvious reasons, should study the question from the sociologic and humanitarian standpoints.

It is reasonable to expect that such a commission would be able to obtain a wealth of reliable information which would permit our lawmakers to frame an effective nar-

cotic drug law that will receive the support and cooperation of the medical profession.

At the present time we are groping in the dark and it seems likely that much of the treatment now being carried out is founded on false premises. The truth is, there is no established line of treatment today for drug addiction, and our first object should be to find out why this is so.

An important step in this direction would be the provision of institutions to which drug addicts could go for investigation without publicity or humiliation and for treatment by the best available methods. Mr. Sands, in his evidence before the Whitney Committee, previously referred to, recommended that national, state and municipal institutions be established where addicts could obtain the best medical treatment possible. The suggestion is a good one, not alone because of the benefits this unfortunate class would receive, but because the plan offers the only prospects of learning what is the best medical treatment.

On several occasions AMERICAN MEDICINE has taken up this subject, because of its manifest importance, and in the November 1915 issue, in a paper that attracted much attention, Dr. Ernest S. Bishop gave his views as to the solution of the problem of narcotic drug addiction. As his words are quite as timely and significant now as when they were written, it seems desirable to refer to them in detail. Dr. Bishop was one of the first physicians who had the courage to hold that drug addicts should be treated as patients, and not as criminals, that drug addiction is a disease rather than a vice. Consequently, he was one of the first to point out that their successful treatment and the solution of the whole problem of narcotic drug addiction lie "not in custodial care and restraint, not in lawmaking, punishment, moralizing and exhortation, not in the discovery of any wonderful panacea, special treatment, method or specific. On the contrary, the solution of the problem and the answer to the addict's long and hopelessly rendered prayer for cure and help will be found in the education of the medical practitioners of this country." In plain words, medical men must first possess an adequate knowledge of the pathologic phenomena of drug addiction before they can hope to treat it successfully.

Dr. Bishop has conclusively shown that it

is possible for any intelligent physician to treat narcotic drug addiction, with gratifying results in the majority of cases by the simple, common sense application of what is known of disease processes generally, for in his experience, with the disappearance of certain definite, understandable pathologic conditions, the so-called "habit" and "craving" passes away. Moreover, Dr. Bishop knows, and this knowledge constitutes today the best recompense he has for past efforts—and gives the best assurance of future accomplishment—that by lectures and practical clinical instruction he is sending men out, general practitioners of medicine, who are able to handle successfully these cases of narcotic drug addiction without restraint, without special methods, without routine medication, simply on a basis of an understanding of disease fundamentals, and the application of rational therapeutics. On the other hand, Dr. Bishop is equally emphatic in declaring that incompetent treatment not only does no good, but often a great deal of harm. By such treatment, namely, that founded on incorrect conceptions of the nature of the malady, the patient loses faith, becomes profoundly discouraged, and gets the idea his condition is incurable. This is the history of most of these sufferers.

There is, of course, no space to deal here with details of treatment. This much, however, may be said, that with regard to discontinuing the drug, in the case of an individual whose nerves are unstrung and whose intestinal tract is torpid and overloaded, withdrawal should not be sudden. Usually a good deal of medical work—in the direction of elimination especially—must be done before it is time to wholly take away the narcotic. The patient's physiology is far from normal, and it must be made so before complete withdrawal can be safely accomplished. In the last analysis, therefore, it is apparent, as Dr. Bishop has repeated over and over in the articles quoted from, that without full comprehension of the pathologic conditions caused by drug addiction, and real sympathy with the drug patient himself, no real progress will ever be made towards the solution of the drug problem.

In the foregoing remarks we have taken the liberty of referring to Dr. Bishop freely, because we believe he has done more than

any other physician to establish the fact that drug addiction is a medical problem, in a word, a disease affecting honest, intelligent people in all walks of life. It has been unfortunate that so few practitioners of the type of Dr. Bishop and Dr. Pettey have had the courage to take up the cudgels for the drug addict. With drug patients forced to depend in the past so largely on quacks and charlatans, it is not difficult to understand the opinion that prevails among these sufferers concerning the medical profession generally.

In concluding this consideration of a subject that is bound to grow in importance to every public spirited individual as it is studied, we cannot help but feel as Senator Whitney states in this issue, as Dr. Bishop has preached for years, "like a voice crying in the wilderness" and as every other thoughtful person who has given any attention to the matter has agreed, the great crying need of the hour is for medical men to come forward and give their aid and co-operation to the efforts being directed to a better understanding of this grave matter. Many philanthropic people, judges, public officials, legislators and social workers have shown a desire and willingness to do their part in helping to uproot this evil of drug addiction. Will the medical profession, in the face of so evident a duty, continue to hold itself aloof, and remain indifferent to the pathetic cry for aid by those who are suffering from chronic narcotism?

We do not think so, and while there may be some who will hesitate, we are confident now that drug addiction is recognized as a legitimate problem of medical practice, plenty of the right kind of doctors will be found ready and willing to do their full part in helping to correct the situation.

A Medical Organization Devoted to the Problems of Narcotic Drug Addiction.—

Of especial importance in connection with the general opinion that the results hoped for in the fight against the abuse and improper use of narcotic drugs will never be accomplished until medical men take a more active part, is the recent announcement of the organization of a Section on Narcotic Addiction in connection with the American Medical Society for the Study of Alcohol

and Narcotics. The officers of this new Section are as follows:

Arthur R. Braunlich, M. D., New York City, Chairman; John P. Davin, M. D., New York City, Edward N. Kirk Mears, M. D., New York City, Vice-chairman; Christian F. J. Laase, M. D., Secretary, 314 East 18th Street, New York City; Council: Ernest S. Bishop, M. D., New York City, Ferdinand G. Kneer, M. D., New York City, H. Edwin Lewis, M. D., New York City, Chas. Henry Moak, M. D., New York City, John W. Perilli, M. D., New York City, George E. Pettey, M. D., Memphis, Tenn., Edwin J. Richardson, M. D., New York City.

Much good is sure to be done by this Section on Narcotic Addiction, as it will give exceptional opportunities for all interested medical men to unite for the study of the various scientific phases of the problem. Arrangements have already been made to secure the services of a competent lawyer who is thoroly posted on our present narcotic drug law. He will be ready at all times to give the members of the Section information and advice as to any detail of the law, or in the event of any of them getting into trouble, thru innocent or technical violation of its mandates or restrictions, his services, as well as the full influence and support of the whole organizations, can be counted on. The Council, as we understand it, will give a hearing to the member who is accused under the law, and decide whether he is entitled or not to the aid and support of the Society. It is hardly necessary to state that any infraction of the law indicating moral turpitude or insufficient regard for one's professional or legal obligations will deny a member any right to expect the support of the Society.

The officers of this new Section are physicians of the highest standing and reputation, and their character leaves no room for doubting that the organization will win a very substantial success. Already it numbers some of the best known medical men of the country on its membership role, and it promises to exert a potent and far reaching influence not only by bringing interested physicians together in a strong organization, but also by emphasizing the necessity of devoting more thought to the medical and medico-legal phases of the narcotic drug problem. Every practicing physician who recognizes the desirability of promoting the work of this organization should not delay in affiliating himself with it.

The Medical Profession Need Offer No Apology.

—We have held consistently from the declaration of war by Congress that the medical profession would not be found wanting as the nation's needs became apparent. Many doctors have not been in a position to leave their civil practice and offer their services instantaneously, but as necessity develops, no matter what the personal sacrifice, an adequate supply of capable medical men will be forthcoming. We have resented certain imputations that have been offered to American physicians, but as these were in no instance put forth in a spirit of malice or bad faith, but rather as a consequence of enthusiasm and an earnest desire to see the doctors of the land "make good," we freely condone the impression that was allowed to go forth.

In view of this impression which we have encountered in certain quarters to the effect that the physicians were not responding as they should to the call of the country, it is refreshing to find the following appreciation in a lay publication of the standing of *Popular Mechanics* (Jan., 1918):

"Our Medical Service.—With our troops to France will go the largest, best organized, best equipped medical branch in the world's history. In the formation of this department we have had the benefit of the united experience of the English and French surgeons-general.

Few are aware to what an extent the doctors and surgeons of the country have responded. From no other profession or occupation has the percentage of volunteers been so large.

Ten months ago in the office of the surgeon-general, in Washington, there were only six assistants; and the total enlisted medical men in both army and navy numbered 420, including our territorial possessions.

When the call came, there were 143,000 physicians and surgeons in the United States. Immediately 25,000 of them volunteered for service. Of these, over 14,000 have already been commissioned.

The executive force in the surgeon-general's office has grown from six to over 200, and here are gathered each day and far into the night, and often all night, scores of the ablest surgeons in the land. Experts

and professors from the largest medical schools and hospitals; doctors whose books are studied at home and abroad; surgeons who were earning a princely fortune each year, to whom patients traveled thousands of miles; others with more moderate incomes who could less well afford to do so, gave up their practice and have joined the medical branch. And these earnest men are rapidly forging into shape the largest and most efficient surgical organization the world has ever known."

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This issue, to a very considerable extent, is devoted to material emphasizing various phases of the narcotic drug problem. We have deemed it wise and desirable to give a good deal of space at this time to some of the questions involved; *first*, because the hearings of the special legislative committee of which Senator George H. Whitney is Chairman have shown that the narcotic drug situation is one demanding the earnest thought and attention of every true citizen—the reputable members of the medical profession particularly; *second*, because, if the earnest, conscientious doctors can be sufficiently aroused to come forward and demonstrate the interest they must have in this serious matter, there are better chances than ever of reaching a true solution of this great medical problem with full protection of the honor and professional prerogatives of physicians themselves, and maximum benefits to an unfortunate class of sufferers; and *third*, because we earnestly hope to see certain features of present laws repealed, in order to remove the stigma and restrictions which now keep the majority of honest physicians from taking the active part they otherwise would in the care and treatment of drug users.

The material which we present is designed, therefore, to emphasize the importance of the problem, its humanitarian as well as civic welfare aspects, and the urgent necessity of every public spirited, kindly disposed individual—the reputable doctor especially—giving every possible aid to the determination of effective means of relieving and correcting the unquestionably serious disease of drug addiction.

We earnestly hope that the day is not far distant when we may be able to give our

readers some further articles that will indicate that this disease is at last as definitely and permanently curable as so many others over which medical science can claim the mastery.

In the meantime we bespeak a sympathetic reading of the various articles appearing in this issue on the social, legislative, humanitarian and personal phases of drug addiction.

A Wonderful Tribute.—The first three American soldiers to lose their lives in the war are sleeping the last great sleep in France. A splendid ceremony characterized their burial, and the beautiful tribute paid to them by a French officer, with all the eloquence of his race, is so full of all that fills men's souls with love of country, and the willingness to die for the principles they cherish, that we wish to preserve them for the readers of AMERICAN MEDICINE.

Following is the translation of words that should live as long as the world prizes valor, honor and the love of right.

"In the name of the —th division, in the name of the French Army, and in the name of France I bid farewell to Private Enright, Private Gresham and Private Hay of the American Army.

"Of their own free will they had left a prosperous and happy country to come over here. They knew war was continuing in Europe; they knew that the forces fighting for honor, love of justice and civilization were still checked by the long-prepared forces serving the powers of brutal domination, oppression and barbarity. They knew that efforts were still necessary. They wished to give us their generous hearts, and they have not forgotten old historical memories, while others forget more recent ones.

"They ignored nothing of the circumstances and nothing had been concealed from them—neither the length and hardships of war, nor the violence of battle, nor the dreadfulness of new weapons, nor the perfidy of the foe. Nothing stopped them. They accepted the hard and strenuous life; they crossed the ocean at great peril; they took their places on the front by our side, and they have fallen facing the foe in a hard and desperate hand-to-hand fight. Honor to them. Their families, friends and fellow-citizens will be proud when they learn of their deaths.

"Men! These graves, the first to be dug in our national soil, and but a short distance from the enemy, are as a mark of the mighty land we and our Allies firmly cling to in the common task, confirming the will of the people and the

army of the United States to fight with us to a finish, ready to sacrifice as long as is necessary until final victory for the most noble of causes, that of the liberty of nations, the weak as well as the mighty. Thus the deaths of these humble soldiers appear to us with extraordinary grandeur.

"We will, therefore, ask that the mortal remains of these young men be left here, left with us forever. We inscribe on the tombs, 'Here lie the first soldiers of the Republic of the United States to fall on the soil of France for liberty and justice.' The passerby will stop and uncover his head. Travelers and men of heart will go out of their way to come here to pay their respective tributes.

"Private Enright, Private Gresham, Private Hay! In the name of France I thank you. God receive your souls. Farewell!"

Flag of America.

O Flag of America—Red, White and Blue—

The Flag of the brave and the free,

Our heads are uncovered, our hearts are enslaved,

Our souls are enamoured of thee.

Our eyes gaze upon thee with passion divine,

While from the real depths of our heart

There rises a prayer to God's throne in the skies,

That you and we never shall part.

You are the most beautiful banner that floats

Over nations in war or in peace,

And never, no never, we'll fold you away,

Until warring forever shall cease.

The hand of the despot no longer must hold

The bodies and souls of our race

Tight held in his grasp—that grasp must be torn,

Each man must stand up face to face.

So fighting beneath you, Old Glory, our pride,

Which never has trailed in the dust,

We know we shall win in this terrible strife,

For our cause is both righteous and just.

O Flag that has never yet met a defeat,

O glorious Red, White and Blue,

We stand 'neath your folds, we gaze on your stars,

And we promise to ever be true.

To you and the principles you represent,

To God on His Throne in the sky,

For you will we work, and for you will we fight,

And for you, if need be, will we die.

—SPENCER M. FREE



DRUG ADDICTION AS A PROBLEM FOR LEGISLATION—BRIEF REMARKS ON WHAT HAS BEEN DONE IN THE STATE OF NEW YORK.

BY

HON. GEORGE H. WHITNEY,

Chairman Joint Legislative Committee for the Investigation of Habit-forming Drugs, New York State Senate, Albany, N. Y.

In response to a request for a contribution to the current issue of *AMERICAN MEDICINE*, concerning the narcotic drug situation as found to exist by the Joint Legislative Committee of which I am Chairman, I am glad to refer briefly to the work of the Committee to date.

This Committee held public hearings in the principal cities of the State which were open to any who cared to take part in the discussion of the subject. A very large amount of testimony was secured, all of which is on record in the stenographic reports of the hearings on file at Albany.

The results of the hearings were: *first*, the discovery of the vast extent of this affliction of narcotic addiction; *second*, its recognition as a disease causing intense suffering and distressing physical manifestations; *third*, a realization that the great mass of the public, officials as well as private individuals, is entirely ignorant of the conditions existing, of their gravity, of their character, or of their complexity; and *fourth*, that the medical profession as well as the laity have no proper conception of the physical, pathological, psychical and social causes which undoubtedly lie at the bottom of this serious morbid condition or disease.

The Joint Committee of the New York

State Legislature from the evidence brought forward at its hearings realized the unexpected importance, size, scope and complexity of the conditions presented. It confined its active efforts in legislation to such modifications of existing laws as would tend to ameliorate urgent conditions without adding administrative problems to a community not sufficiently conversant with the addiction condition, or adequately equipped to practically handle it.

It seems from such evidence as has been presented that the most imperative and pressing need in the present condition of narcotic addicts can only be properly met within the medical profession. This need is humane, and intelligent handling and treatment of the persons in all walks of life who are suffering from this disease of narcotic drug addiction must be looked on as an urgent professional obligation. This disease appears to be as common among the higher walks of life as among those represented by the cases coming into constant contact with the police and the courts. Remedy and relief are the immediate necessity. I am glad that *AMERICAN MEDICINE* is willing to undertake the work of placing before medical men the facts of existing conditions, with the object of stimulating medical interest and medical effort in the study and disposition of what seems to me now a medical problem of first importance.

The findings in general of the Joint Legislative Committee were incorporated in a "Preliminary Report" presented to the Legislature last February. I am including herewith a copy of this "Preliminary Report" for publication, if space will permit, believing that it will give the readers of *AMERICAN MEDICINE* a comprehensive idea of the efforts of the Committee to consider this grave question earnestly, sympathetic-

ally and intelligently, from a broad humanitarian standpoint.

The Joint Committee has been continued for another year to pursue its investigations. We earnestly ask the cooperation, interest and help of the medical profession. This Committee is trying to obtain information which will lead to rational legislation which, rationally administered, will lead to rational handling and treatment of a serious disease. I am convinced that without medical help the situation is certain to grow more serious and lead to much graver conditions.

The Committee hopes that medical men and medical organizations will not only manifest interest in the medical problems involved in this disease of narcotic addiction, but give us their support and assistance in their practical solution. We are seeing now that without medical help, and competent medical information, little or nothing can be accomplished in the control of a condition which so seriously menaces our public health and welfare.

PRELIMINARY REPORT

of

Joint Legislative Committee Appointed to Investigate and Examine the Laws in Relation to the Distribution and Sale of So-called Habit-forming Narcotic Drugs Made February 19, 1917.

The Joint Legislative Committee appointed to investigate and examine the laws in relation to the distribution and sale of so-called habit-forming narcotic drugs, the manner in which such laws are enforced and the measures to be taken for the better enforcement of said laws submits the following preliminary report:

The Committee was authorized by concurrent resolution of Senate and Assembly in April, 1916, with instructions to report by February 1, 1917. The Committee was appointed in September, 1916, and met for organization in November, 1916. Under concurrent resolution of January 30 and 31 the time of the Committee for submission of its report was extended to March 1, 1917.

The Committee has held public hearings in New York, Brooklyn, Buffalo, Syracuse and Albany. These hearings have been well attended and a large amount of testimony has been taken and many valuable suggestions have been received both from those charged with the distribution of narcotic drugs and those responsible for the enforcement of the laws in respect to the sale and use of such drugs. Your Committee therefore here wishes to express its appreciation for such cooperation and its indebtedness to members of the Judges and Justices Associa-

tion of the State of New York, to members of the medical profession associated in drug addiction work in the great penal, charitable and correctional institutions of the State and to laymen and members of the pharmaceutical profession who aided in its investigations.

The statements prepared for the Committee of Judges and Justices by Dr. Ernest S. Bishop of New York, and submitted to your committee through the courtesy of Judge Cornelius Collins of the Court of Special Session, New York City, together with reprints of Dr. Bishop's writings on the subject of narcotic drug addiction, were especially useful in giving your Committee insight into existing narcotic conditions.

Corroborating testimony regarding the problem of narcotic drug addiction also was offered by Drs. Alexander Lambert of New York City, Charles Rosenwasser, Newark, N. J., James F. Rooney of Albany, N. Y., Franklin C. Graham, Buffalo, N. Y. and George E. Petty, Memphis, Tenn. Other most valuable testimony was put in evidence by Chief Magistrate McAdoo, New York City, Judge Cornelius Collins, New York City, Judge John F. Brady, Albany, Commissioner of Correction Burdett Lewis, New York City, and other officials and prosecuting officers of the State and City of New York.

The evidence adduced by the hearings of your Committee shows that the problem of narcotic drug addiction has passed all bounds of reasonable comprehension in the State of New York and in the United States. In a recent report promulgated by the Massachusetts Commission, entrusted by the State Legislature with investigation of drug addiction in that State, it was estimated that 60,000 addicted lived within its confines.

While there is no definite data at hand upon which to base an estimate as to the exact number of drug users in the State of New York, your Committee believes that at least 100,000 people are now suffering from this disease.

The vital importance of making a systematic study and classification of this affliction from a sociological and medical standpoint cannot therefore be overestimated to the commonwealth.

Lack of understanding and appreciation of the disease of narcotic drug addiction and its treatment by a large majority of the medical profession has fostered conditions which make it impossible to determine a rational procedure for treating and curing the addicted by the State at this time.

Such absence of uniformity of opinion has worked great hardship upon the public and has laid the narcotic drug addict, open to misconception, misunderstanding and medical treatment which, in many instances, has resulted in harm rather than good.

Evidence offered by physicians shows that many addicts have died under the methods of treatment existing today and that a large percentage of those discharged from institutions as "cured" are driven back to use of narcotics thru unbearable physical torture induced by improper withdrawal of their drug.

Evidence from physicians was adduced which denied that any cure for narcotic drug addictions existed in any of the private or public institutions of this State. Evidence from other eminent physicians was adduced which bore testimony to the fact that the disease of narcotic drug addiction was curable.

The difference of medical opinion existing in medical circles regarding this vitally important question should be made the subject of a thoro and searching investigation as a matter of the greatest importance to the welfare of a large number of people in the State of New York.

Your Committee has found that narcotic drug addiction bears no relation in point of character and seriousness to any other known habit induced by the use of stimulants. Narcotic drug addicts, according to evidence adduced, should not be classed with the alcoholic or the tobacco addict or the cocaine habitue.

The constant use of narcotics produces a condition in the human body that many physicians of medical authority now recognize as a definite disease, which diseased condition absolutely requires a continued administration of narcotics to keep the body in normal function unless proper treatment and cure are provided.

Withdrawal of the drug of addiction induces such fundamental physical disorganization and unbearable pain that addicts are driven to any extreme to obtain narcotic drugs and allay their suffering by self-administration.

Testimony of physicians coming in contact with the addicts and statements of addicts themselves show that those afflicted with this disease express every desire to secure humane and competent treatment and cure and that most narcotic drug users are willing to undergo physical torture, and often do voluntarily undergo such torture, in an effort to be rid of their so-called habit.

In the present chaotic condition of medical opinion on this subject, it is impossible for the addict today to either secure authentic information on the subject of his disease and its treatment, or to procure at the hands of the average physician competent treatment for his malady.

It has further been stated by competent authorities before your Committee that drug addiction is not confined to the criminal or defective class of humanity.

This disease, however contracted, is prevalent among members of every social class. Some physicians estimate that addicts of the so-called underworld are far outnumbered by unfortunate drug users drafted from social circles of refinement and intelligence in the State of New York, who have become addicted to the constant use of narcotic drugs, but who are able to hide their affliction from the public.

The attitude of the public toward the narcotic drug addict, fostered by the increasing prevalence of the disease in the criminal classes and by the apparent lack of medical help, has forced such drug users to keep their affliction a secret.

This necessity in turn, your Committee finds, has apparently contributed to the existence of

many unsound nostrums for the cure of narcotic drug addiction and many private institutions where this disease is purported to be cured which exist solely for the purpose of preying upon the addict.

State investigation and regulation of such cures and institutions is recommended by your Committee.

Your Committee is inclined to criticize the medical profession for its lack of study of the increasingly important subject of narcotic drug addiction. The only excuse which can be offered for this unfortunate condition lies in the fact that there has not been medical appreciation of conditions and that legislation, both State and Federal, has forced upon the physician a situation for which he was wholly unprepared.

Your Committee believes it to be one of the first duties of the State, in dealing with this grave situation, to establish a supply of narcotic drugs to which the confirmed addict shall have access, under proper State regulation, pending the establishment of rational and recognized scientific treatment for his disease.

The Committee believes that of even greater importance is a thoro and searching investigation of all phases of the great problem of narcotic drug addiction existing in the State of New York, with the definite view of requesting or employing services of medical experts familiar with this disease and evolving from the mass of contradictory evidence at hand some order and classification which shall point to competent care and ultimate cure.

Searching and thoro investigation is needed in order to determine and establish fundamental and recognized elements and principles which are in accord with existing facts, and which shall be available as an authoritative foundation for the guidance, decision and direction of those dealing with the addict, and for the determination of honesty, good faith and intelligent procedure in those undertaking his treatment and care.

It has been impossible in the brief time afforded your Committee adequately to study the various treatments given in municipal, State and private institutions, with a view to recommendations on this subject, or to get the addicts' full stories or detailed testimony on the subject of narcotic drug use.

Your Committee recommends that more time be given to study conditions, and that the power of the Committee be enlarged to provide for an investigation and examination of all institutions, private and public, attempting or claiming to treat or cure narcotic drug addictions.

Your Committee is convinced that this subject is of such vital importance to the people of the State of New York as to justify this procedure.

Proper and humane treatment and cure should be provided for the addict by the State and necessary legislation enacted to prevent the spread of narcotic addiction.

The testimony taken by your Committee shows that those charged with the sale and distribution of narcotic drugs are in the main observing the law, and that the legal distribu-

tion of these drugs is less than before the enactment of existing narcotic laws, both federal and state.

On the other hand it is apparent from this testimony that public consumption of narcotic drugs has increased to an alarming extent. The inevitable conclusion is that the unfortunate addict has been forced to and does obtain his supply illegally.

This condition arises very largely from the fact that many physicians and pharmacists, either thru misunderstanding of the law or the true nature of the addict's disease, have refused to prescribe or dispense narcotic drugs to the sufferer.

Your Committee contends that any member of the medical or pharmaceutical professions who refuses either to prescribe or to dispense narcotic drugs to the honest addict to alleviate the suffering and pain occasioned by lack of narcotics is not living up to the high standards of humanity and intelligence established by these great professions.

In the opinion of your Committee, supplemental remedial legislation should be enacted at the present session of the Legislature with a view to further safeguarding the public from the ravages of narcotic drug addiction and providing means for a better check upon the narcotics dispensed in New York State.

Such legislation should provide for a more complete record of narcotics distributed thru legal mediums to the public in the form of a triplicate order blank upon which physicians, pharmacists, veterinarians and dentists shall obtain their supply of narcotics from manufacturers and jobbers.

A definite form for these blanks should be established by the State Department of Health and the distribution of the said blanks should be under the authority of the said Department.

Every physician, pharmacist, veterinarian or dentist ordering narcotics in quantity should be required to keep a copy on a form supplied, stating the amounts of the said drugs so ordered and the date when the order is entered.

A copy of this official order blank should be forwarded to the manufacturer or jobber filling such order and another copy of the said order should be forwarded to the State Department of Health, at Albany, N. Y., for record in that department.

Regulations regarding the inventory and accounting of narcotic drugs should be as far as possible in accord with the provisions of the present so-called Harrison Law now on the statute books of the federal government, so that excessive clerical labor shall not fall upon the medical and pharmaceutical professions.

Physicians and pharmacists, testifying before your Committee, have endorsed this recommendation as one that will help the administrative authorities of the municipal, county and state governments, to run down and prosecute mal-practitioners who violate the ethics of their profession, the laws of the state and the mandates of humanity by wilfully propagating and perpetuating narcotic drug addiction.

Your Committee also recommends that means be provided for the gathering of statistics upon

narcotic drug addiction in the State of New York and the registration of addicts with some central department of the state government for the purpose of not only recording these unfortunate persons, but of offering such advice as to rational treatment and cure as may be authentically brought to the attention of the state in the future.

Serious objection has been raised to this procedure by members of the medical profession on the ground that such registration is in violation of the ethical standards of that profession and on the further ground that proprietors of unsound "cures" for narcotic drug addiction and of so-called "fake" sanitariums for the treatment of narcotic drug addiction would have access to the record recommended, and promote trade thereby at the expense of the addict.

Your Committee recommends that the department of the state government instructed to file and keep such addiction records be also instructed to divulge its contents only to the proper authorities charged with enforcement of the law in the municipal, county and state governments.

It further submits that a record of narcotic drug addiction so kept would be of great value to the state in dispensing knowledge as to the true nature of addiction disease and in bringing to the attention of the addict any authentic and scientific formula, procedure or method of treatment for this disease that may be evolved in the future.

Such record of addicts also would be of great value in properly administering the proposed drug supply recommended to be established by the state for the use of confirmed narcotic drug addicts in another part of this report.

Having in mind the enlightened classification of narcotic drug addiction as a definite disease and not a vicious "habit" that can be broken at will, brought to the attention of your Committee by eminent physicians, it is further recommended that the present laws providing for commitment of narcotic drug addicts to penal, correctional or charitable institutions be amended to also permit the commitment of said addicts to the care of a reputable physician who shall be found to be conducting his affairs in accordance with the laws of the State of New York and the established ethics of the medical profession, provided that the person so committed shall have at hand sufficient funds to defray the expense of such treatment.

Your Committee submits that the illicit traffic in narcotic drugs, fostered by the absolute need of the addict for narcotics, is the greatest evil with which the commonwealth has to contend at the present time and that such illicit traffic presents a real and increasing danger of spread of the narcotic drug addiction disease to normal persons thru the unlicensed and unregulated distribution of such drugs by irresponsible persons.

Your Committee submits that this illegal traffic in narcotic drugs is promoted by lack of uniformity in the public health laws of adjacent states and the federal government in relation to the regulation of sale, manufacture

and distribution of narcotic drugs and that this lack of legislative uniformity is now a matter calling for the gravest consideration of the governing bodies of the various states of the Union and of the federal government.

Officials charged with the administration of the law in the State of New York and municipalities thereof have testified before your Committee that the absence of uniform federal and state statutes dealing with the great question of narcotic drug addiction and the manufacture, distribution and sale of narcotic drugs largely invalidates the statutes of this State and renders increasingly difficult the apprehension of illegal distributors who spread narcotic drug addiction by unlicensed distribution.

It is recommended by your Committee, as a means of ameliorating this condition as far as possible by immediate legislation, that the present law be amended to include within its scope all persons, not duly licensed, physicians, veterinarians, dentists, or officials of private or public institutions charged with the treatment of disease, who shall aid or abet or assist in any way in procuring narcotic drugs other than thru the regular channels for distribution established by the state and that such person shall be guilty of a misdemeanor.

It is further recommended by your Committee that the present law be amended to bring within its scope any person or persons who shall procure or attempt to procure narcotic drugs thru false representation as a duly licensed physician, pharmacist, veterinarian, or dentist, or who shall forge a prescription or order for these drugs and that such a person shall be adjudged guilty of a felony.

It has also been suggested to your Committee by various authorities in the State of New York charged with the enforcement of the law that the present law relating to the use, sale and distribution of the hypodermic syringe should be amended to require the issuance of a certificate to any person using such an implement and not a duly licensed physician, pharmacist, veterinarian, or registered nurse, which certificate shall entitle its holder to possession of the said hypodermic syringe for a period of time required for its legitimate use and the non-possession of which certificate shall make the possessor of the said hypodermic syringe amenable to prosecution under the law as it now is written upon the statute books of the state.

Your Committee is prepared to draft legislation, and recommends the passage of such legislation by the State Legislature, embodying the points set forth in this report toward the end that laws may be enacted by the legislative body of the State of New York which shall, so far as possible, restrict the manufacture, sale and distribution of narcotic drugs in a manner that will prove beneficial to the normal and physical welfare of the people of the State of New York and also take into grave consideration the needs of the victim of narcotic drug addiction.

Your Committee closes the report formulated upon its hearings held in the State of New York and cities thereof with reiteration of its opinion that constant use of narcotic drugs by

an increasing minority of the people of this state is a matter so gravely important to the welfare of the commonwealth that it merits the most serious consideration of State legislators and officials whose duties include the promotion of moral and physical good health.

A copy of the hearing held by your Committee is appended.

GEO. H. WHITNEY, *Chairman.*

GEO. R. BRENNAN,

R. M. PRANGEN,

JOHN J. BOYLAN,

MAURICE BLOCH,

Members of Assembly.

NARCOTIC DRUG ADDICTION—A GRAVE SOCIAL PROBLEM.

BY

J. E. WATSON,

*Editorial Staff New York American,
New York City.*

Investigation of the current situation with regard to widespread use of narcotic drugs in New York State was begun more than two years ago under my supervision.

So startling were the disclosures that the *American* took up the matter in earnest at the last session of the State Legislature, at Albany, and actively supported legislation proposed by the Whitney Legislative Committee to ameliorate conditions affecting addicts.

It was found, thru examination of addicts and testimony of reputable physicians associated in the treatment of this disease, that habitual use of narcotic drugs had spread thru all classes of society from the highest to the lowest.

Personally, I have been the recipient of letters from addicts, who occupy positions of responsibility in the law, medicine, drama and society. Each one of these unfortunates had the same tale to tell—condemnation of state and private cures which they had been induced to take, and pitiful pleas for intelligent investigation and treatment of addiction disease by reputable medical men.

The weight of evidence proved conclusively that the average physician of today has slighted his professional duty as regards the care of narcotic drug users. He refuses to treat the addict on the exploded theory that addiction is a habit subject to the will of the patient, and in most cases

turns his patient into the street to become the prey of fakirs, charlatans and underworld drug sellers.

Let me quote one experience along these lines: Mr. R—, a vaudeville performer, stricken with an eye affection which left him with greatly impaired eyesight, came to my office for relief. Morphine had been freely administered to this man during his illness and he was discharged from an upstate hospital with addiction.

At the time he applied for help, Mr.— was drinking a quart of paregoric per day, the only narcotic content compound he could get without a physician's prescription. And this man had been turned down in his pleas for treatment and drugs by over half a hundred ignorant physicians.

The net result was the temporary loss to the community of a useful member of society. His money was gone, his wife and family were suffering by his incapacity and the patient himself suffered continuous pain and testified that he would take his life unless he could find relief.

There are thousands of such cases, throughout New York State, which are kept from intelligent care and cure by the ignorance of physicians.

The doctor should remember that the Whitney law, now on the New York State statute books, permits the treatment of addicts. He should remember that the addict suffers from a real disease. And he should bend intelligent effort toward cure of this class of patients.

The old theory, that where morphine is used to dull pain there can be no addiction, is exploded. The "habit" dogma with regard to constant narcotic use also is a back number. In but a small percentage of cases is the use of morphine social.

These facts ought to be borne in mind by the physician, and he should recognize in the addict patient a sick man worthy of intelligent care and consideration.

Mustard.—Mustard is an excellent emergency germicide. Its value was demonstrated by Roswell Park, who used a mixture of soap, cornmeal and mustard flour to scrub the surgeon's hands or the patient's skin. Mustard removes the odor of decay at once.—*Med. Review of Reviews* (Nov., 1917).

THE GOVERNMENT AND THE NARCOTIC DRUG PROBLEM.¹

BY

A GOVERNMENT OFFICIAL.

In the recent past, Congress and the several state legislatures awoke to the appalling fact that the unrestricted manufacture, importation, sale and use of narcotic drugs, especially opium and its derivatives were rapidly undermining the physical manhood and womanhood of our people by the hundreds of thousands, and incidentally furnishing a basis for the greatest moral shame that this country has known—that of White Slavery.

These crimes against humanity are from obvious reasons most prevalent in our metropolitan centers.

The several enactments to correct, or at least to curtail, drug addiction were moves in the right direction, inspired by high motives tho imperfect and incomplete, because so little is generally known of the physiological effects upon the human body arising from addiction to these powerful drugs.

The effects, however, are the same whether the addict is made in a hospital by his physician, or in a back alley by a street vendor, or whether he be the learned judge upon the bench, or the petty thief at the bar awaiting his sentence.

To a lay official, coming in contact with addicts from all professions and trades and from all walks of life, it is quite evident that drug addiction is a physical ill rather than a moral condition and demands consideration as such.

The Causes.—The causes for the large number of addicted persons may be classified under four heads.

1. The persons who have undergone long periods of illness from disease or injuries to whom an opiate in some form was administered as a relief from intense suffering.

2. The persons who from excessive

¹This paper is contributed by an official who for official and departmental reasons desires his name withheld. This paper represents fairly the attitude and convictions we hear expressed by Government and City officials whose personal experience with thousands of addicts has taught them actual conditions and actual facts. If laymen can see such things they should be obvious enough to compel earnest consideration by the medical profession.

mental strain or from continued undue mental or physical excitement resort, thru the advice of a physician or other person, to an opiate "to quiet his nerves."

3. The persons whose associates are the more depraved among the lower classes in large cities begin the use of the drug because those about them do it, but not, as is popularly thought, for its immoral effects because it is not exhilarating to the person in normal health but rather the opposite.

4. The larger number of recently made addicts are so because of a condition arising from the enforcement of the laws governing the dispensing of narcotic drugs. Before these laws were enacted, narcotic drugs could be procured in any quantity by any person almost anywhere. Fearing embarrassment from some technical violation of law or regulation and not having the proper conception of the diseased conditions produced by drug addiction, a very large per cent. of general medical practitioners and druggists chose the easier way by accepting the police interpretation of drug addiction: *viz.*, that he is a trifling fellow, who from unworthy motives had "formed a habit," from which he could break away, if he so chose.

Based upon this unprofessional and fallacious diagnosis of a very sick man's condition, the patient suffering untold physical agonies was turned into the street and thus forced to go to the man with an advertised "cure," or to the underworld for a drug which to him, and not without foundation in fact, had become to his diseased condition as imperative as food.

This immediately created an abnormal demand for the drug thru illegal channels. Prices soared. Adulteration became the rule. The addict was literally robbed. A new field was furnished for exploitation so attractive to the unscrupulous, that the one-time burglar and yeggman gave up their more hazardous business and became illicit dealers in narcotic drugs, tho not as a rule themselves addicts.

New and abundant sources of supply were found thru smuggling, crooked jobbers and unscrupulous firms and persons permitted under the letter of the law to dispense or deal in drugs.

The profits were immense; therefore the temptation to take the risk.

When the sources of supply had been at-

tained, the class that had been attracted to this illegal trade began to plan to enlarge their business by making new addicts. Being criminals themselves, they sought underworld methods to accomplish their purposes. Their abundant success is proven by the large number of new addicts that have requested treatment, almost all of them being the younger people of the laboring classes. Their stories, frequently verified, reveal fiendish cunning on the part of dealers in their methods of expanding their business.

The conditions just named are not attributable to the laws, altho they might be improved and will be when the public has been sufficiently informed of true conditions and their causes, but to the general medical practitioner who, with few exceptions, has shut his eyes and stopped his ears, chloroformed his professional conscience by unwittingly calling drug addiction a "habit." The present condition will not be materially improved until the medical profession, as such, accepts for treatment and cure those afflicted from drug addiction and thus wrest them from the clutches of that tribe of criminals who prey upon these unfortunates.

Of the four classes of addicts named above, only one, and it not wholly, can be censored for being "a slave to the drug." Surely no physician should object to attempting to cure an addict whom he has made, if he knows how; and if he does not know, he is morally obligated to learn how to do it, for it can be done and that in a humane manner.

So long as man remains upon this earth, new forms of physical affliction will arise to vex him. To whom but the physician shall he go to be healed? Upon the family physician there rests another very grave responsibility—that of educating the public on questions of health and how to conserve and develop the race. The body of the drug addict is literally being devoured. It does not even stop there. The few children born to him, after addiction has him well in its grasp, have not an equal chance for health or life.

Who but a doctor can cope with this question? Even if the fault of addiction rested wholly with the addict (and all men know it does not), would that justify leaving him to die? What typhoid patient

would be refused medical aid because he imbibed the germs knowingly from an infected pool? What man has been denied medical treatment because his loathsome venereal disease was contracted in a den of vice and sin? Is there any "holier than thou" rule that has caused this sufferer to be turned away with epithet of "fiend"? Experience has shown that this will neither cure a physical ill nor reform a moral evil.

Is it a fact, as many assert, that the disordered physical conditions resulting from drug addiction, are not well understood by physicians generally, and that for this reason, they decline to treat them? If this be true, is it not a challenge that the manhood of any great profession would not allow to stand? What then remains in the way? Can it be possible that the mass of members of a learned scientific profession, representing a goodly per cent. of the world's greatest men, should fail to recognize in a suffering drug addict a subject for their professional skill? The writer has seen the addict when his skin was cold and clammy, when cold perspiration stood in beads over his body, when his limbs were tortured from sharp cutting pains, when convulsed with attacks of vomiting or with cramps or emaciated from diarrhea, when he could scarcely walk from weakness or lack of control of the limbs, when he has become prematurely old and haggard, or covered by boils or sores.

It is a known fact that during the past few months young men who were drug addicts, when confined in the guard house, have died in their exceeding great agony.

These are not all the symptoms of the disease known as—or produced by—drug addiction, but what other affliction to which the human body is subject can present so many or more terrible symptoms?

What does it take to constitute a sick man? Not being a physician I cannot give a scientific answer, but to my mind, anything that produces such pain as would destroy bodily competence, or impair the functions of the different organs so that they no longer perform their work, weakening the body, destroying its power for service, bringing premature age and death, would unquestionably be classed as a physical ill. The disease known as drug addiction does all this and more.

The addict himself knows that he is a sick man. From the day he learns that the

curse of addiction has claimed his body as its prey, his daily hope and prayer is to be cured. He has submitted himself to every institution or means within his reach that offers a hope for cure. His earnestness and desperation have made him an "easy mark" for many who have exploited him merely for gain.

He continues the use of the drug not from choice, but only because its continuance is his only surcease from unspeakable tortures. He does not experience pleasant and exhilarating effects from its use, as is popularly believed. The most that he can hope from its use is to lift him back as nearly as possible to the normal feeling of a healthy man.

Of the many hundreds of addicted persons with whom the writer has talked there was not one who did not yearn to be cured. He has not the power to cure himself. Were addiction merely a "habit," he could quit its use by will power, but a condition has been created beyond the sphere of mere will power.

The man, woman, society or institution, that will furnish a human cure within the reach of the suffering thousands of plain working people, will be entitled to the love and honor of a public benefactor, but a greater service still would be for some one who really knows how to cure the diseased conditions resulting from drug addiction, to so disseminate his knowledge that the general medical practitioner could treat and cure the addict just as he would fever patients in the homes in which he practices.

The addicts are so numerous and so widely scattered, and many are so poor, that their needs cannot be met otherwise. Addiction can be cured and the physical body restored to normal conditions. I have seen several who can personally testify to this fact. The longer the public waits for this knowledge to become general, the longer must hundreds of thousands writhe in agony as they pray for relief.

Different Viewpoints.—A. The police viewpoint; that addiction is a self-imposed "habit," which is continued because of the moral depravity of the addict and that therefore all addicts are criminals, may be accounted for from the reason that the only addicts with whom the officers come in contact in their official capacity are those of the criminal class. Their close connection

with drug peddlers, so largely represented by former burglars and yeggmen of the vicious type, helps to influence this opinion. But it should be remembered that this class of drug dispensers are not addicts. They are drawn to the illicit trade in narcotic drugs purely for exploitation purposes.

The crime of White Slavery which makes every parent of girls shudder is augmented by secretly making addicts of the girls, then holding them for immoral purposes thru the enslaving power of the drug—not because the drug produces immoral tendencies, for its known effect is the opposite, but because they must have the drug to live. Their present habitat provides it. Being called “a dope fiend” and therefore a hunted criminal, subject to imprisonment and the certain miseries from the lack of the drug of their addiction, they are held, tho praying daily for release in death.

B. The public, for lack of proper instruction from those who should know the truth *professionally*, have been forced to accept the police definition of an addict. Hence we, without regard to the nobleness of their characters or the correctness of their lives or their commendable attainments, have dubbed the addict “dope fiend,” and have been taught to think of him as a mental and moral weakling, a despicable creature of a habit. Nothing is more unjust or more palpably untrue.

That there are addicts who are also criminals and should be dealt with as such is unquestionably true. The same might be said of consumptives, rheumatics and many other classes of sufferers. Many of the most renowned men and women in professional, business and social life are sufferers from drug addiction. The physical effects of addiction are the same, whatever the station of life. The more prominent hide the fact of their addiction, that they may not be falsely judged.

C. The addict knows that he is a sick man, in need of medical treatment to bring his body back to a normal condition. Experience of the bitterest kind has forced him to a realization of his true physical condition.

D. The average medical practitioner knows little of the physical conditions resulting from narcotic drug addiction and less about how to successfully treat drug addicts until permanently cured. This is

the tragedy of this important question. The misery, crime and wasted lives incident to addiction is directly attributable to this deplorable fact. How long this condition must remain depends upon the medical profession. They are the custodians of public health; when they lead the public will follow. How long must we wait?

DRUG ADDICTION IN THE NEW-BORN.

BY

C. E. TERRY, M. D.,
Formerly Health Officer of Jacksonville,
Florida.

In connection with the enforcement of a local law, relating to the sale of opiates, I had an opportunity to observe what I believe to have been cases of morphine addiction in three newborn infants. In each case the mother was suffering from addiction disease.

While I was not in personal attendance upon these cases, the principal facts were well known to me.

In the first instance, the mother applied to the health officer for treatment when her baby was a few weeks old.

She had not enough milk and had begun bottle feeding about this time.

The baby was therefore placed in the children's ward and put on modified cow's milk.

The baby did badly from the first. It cried almost continuously, vomited a good deal and had diarrhea. It was a full term child, but small and undernourished and apparently unable to assimilate any of the formulae that were tried. It died within a week or ten days of its admission to the hospital.

The second case was that of a baby, delivered in the hospital, of an addict mother.

This baby was apparently normal at birth. Within the first 24 hours after birth it began to cry almost incessantly and by the second day had shown such marked withdrawal symptoms as to suggest the diagnosis of morphine addiction. Its digestion was upset from the first, altho it was not artificially fed; yawning was a marked symptom and entire inability to

sleep. Spasmodic movements of upper and lower extremities developed and it presented altogether quite a typical picture.

When the condition was recognized, morphine was administered hypodermatically with complete abatement of symptoms. During the two weeks that this baby remained in the hospital, it received morphine sulphate in gradually reducing doses. Its mother was able to nurse it and up to the time of her discharge, without treatment for her addiction, the baby progressed normally.

The third case was that of a baby delivered in private practice. The attending physician did not know of the mother's addiction. Symptoms similar to those of the preceding case developed and resisted the physician's treatment for several days. It was finally the mother who first suspected the fact that they were due to drug withdrawal.

She then acquainted her medical attendant with the situation and the administration of morphine resulted in complete relief of symptoms. This baby likewise progressed normally after the institution of rational treatment.

I have always felt that the first case might have been saved, had the condition been recognized and treatment instituted.

Is it not possible that the high mortality rate, among infants of mothers addicted to the use of opium derivatives, is due rather to our failure to recognize the condition of too abrupt drug withdrawal after birth, and therefore our failure to institute the treatment indicated, than to any inherent fatal tendency in such cases?

Food Cooler.—As a simple way to keep milk, cream, and other food, without ice and free from flies, the iceless refrigerator has been devised. This cooler should be kept in a shady place where air will circulate around it. Water is drawn by wicks in water from an upper pan. This water is carried down the sides of the cloth by capillary attraction, and when evaporation takes place the heat is taken from the inside, thereby lowering the temperature. On dry, hot days a temperature of 50 degrees can be obtained in this refrigerator.—*Health Culture.*

HUMAN DOCUMENTS.¹

The Personal Side of Drug Addiction.

SOME VIEWS ON DRUG ADDICTION —PERSONAL AND LEGAL.

BY

A PROMINENT MEMBER OF THE NEW
YORK BAR.

A half dozen years ago I had a long, severe attack of gall-stones and inflammation of the gall-bladder. I suffered so much pain that the physicians gave me morphine for nearly a year. When I got better I tried my very best to get along without the drug, but could not. I came to a physician in New York for treatment who had made a special study of drug addiction and is a recognized authority on that subject. However, he could not help me at that time on account of a recurrence of my gall-bladder inflammation with severe jaundice and fever.

Since that time I have tried repeatedly to stop and reduce the quantity of the drug, but have found it impossible because of the physical pain and exhaustion due to the lack of the drug. This is unbearable. I have since then kept my daily amount of morphine medication at a minimum which permitted me to work and to maintain good health and bodily function. The idea which I have heard so often expressed, that addicts tend to increase their daily intake of narcotic, is certainly untrue in my case, and there seems to me no reason nor temptation to do so. I have simply found the smallest amount which would keep me from physical suffering, and have experienced no difficulty in maintaining that dosage, except in occasional emergencies of gall-bladder attacks or other crises, after which I found it a simple matter to discontinue the excess dosage. As I have never experienced the slightest pleasurable or sensually enjoyable sensations from the administration of morphine, there seems to me no foundation for this prevalent idea of tendency to increase. It may be true of the degenerate who has become addicted, but it certainly is untrue in my case, and must be untrue of the thousands like me whose misfortune it has been to become afflicted with this condition.

Recently I have again consulted specialists, and it seems that with my condition I must continue the administration of morphine for the present, and perhaps for the rest of my life. Physical conditions render present attempts to discontinue its use impractical, undesirable and dangerous.

Now what am I to do under the present "Drug Habit" laws of this State? I am a

¹For obvious reasons the names of the authors of these contributions are not given. The editor, however, has every one of them, and has taken especial care to establish the authenticity and good faith of each article. Each contribution appears as received.

lawyer long past middle age—have held important state and judicial positions, and many positions of responsibility and trust. It would be ruinous to me if my addiction condition became public.

This law was enacted to control the drug traffic and to stop the evils which are connected with it. In many respects it is an excellent law, but the provisions which require the record of the name, age and residence of the addict to be filed in the Board of Health Office is outrageous. It does not affect the underworld, for they don't care and avoid registration by not going to those who have to register them. But see the position of a man who has a good reputation and standing in the community—forever recorded in the records of the State Board of Health as a "dope fiend," even tho his condition is not the result of his own acts or desires and absolutely beyond his control.

This part of the law which requires the recording of the name, age and residence of the addict should be repealed. The only effect of these provisions is to record the addict as what everybody considers a "dope fiend" or force him to go to the smugglers for his drug. He must either place his good name and social and economic position in constant jeopardy or in some way or other evade the law with its attendant penalty, and constant fear of detection. I should not be surprised if it finally develops to be the fact that a majority of decent sufferers from this condition have chosen the latter course as the lesser of evils.

I am informed that the Health Department has recently issued monthly registration blanks to physicians, demanding, in addition to the name, age and residence of the addict, the date and amounts of each prescription together with other information as to the individual cases treated. This makes conditions still more obnoxious and unbearable. Furthermore, this action of the authorities of the Board of Health is unwarranted and illegal. There is nothing in the powers of the Board of Health which permit them such action, and such action is without any justification in the letter of the law or in any possible interpretation of the spirit and intent of the law.

The data demanded was submitted to the Legislature as provisions in the law when the bill was being considered, and were rejected. The Health Department is usurping the powers of the Legislature, which it has no authority to do. The law plainly states what the physician shall report and the Board of Health has no power to require additional matters. Such action constitutes illegal interference with the rights of physician and patient as to matters of treatment and as to violation of professional confidence. It is my opinion that a narcotic addict might have grounds for legal procedure against a physician who furnished such information as the Health Department demands.

Conditions in New York today, affecting the honest addict, constitute in effect persecution of the sick. It is bad enough to be afflicted with this disease. Agonizing as gall-stone attacks have been, the physical suffering from lack of

morphine in an addict is worse. Added to this is the knowledge that your name is on file at Albany, and perhaps elsewhere, as an addict. You know that disclosure of your condition will ruin you and disgrace your family. You are potentially subject to leakage from those records and the attendant possibilities of blackmail and other persecution. Such conditions tend to force and undoubtedly have forced many innocent and honest addicts of good social and economic standing to become criminals by obtaining their necessary opiate medicine thru illegal channels.

Something certainly should be done to remedy existing conditions and existing laws. The great State of New York should not place its unfortunate sick in their present position.

THE PERSONAL HISTORY OF A MEDICAL ADDICT.

BY

A WELL-KNOWN AMERICAN PHYSICIAN.

When the suggestion was first made by a medical friend that I should write a short account of my personal experience as a drug addict, particularly in reference to my status as a practitioner of medicine, the idea, for obvious reasons, was repellent, notwithstanding the fact that my identity should not be disclosed. But after mature deliberation, I realized that it is largely due to this natural reticence on the part of those in position to speak, that the unfortunate addict is regarded as a social pariah by the general public, and that until the medical profession shall acquire more accurate and less distorted knowledge of this serious question, we cannot hope for any improvement along these lines. Until this is done, cruel and unjust laws will be enforced, wretched victims will be imprisoned as felons, and what is more distressing, these unfortunates will, in many instances, be subjected to torture to which death is preferable—and not infrequently results. All this is based upon the accepted theory that drug addiction is a vicious habit requiring only a little fortitude and strength of will on the part of the wretched victim to rid himself of it, while the saddest feature of it all is that this canker, eating at the very heart of the nation itself, blighting and destroying the lives of many useful men and women, is not being reached.

That the average medical man can remain so hopelessly, I might say criminally, negligent of the true conditions of drug addiction is a cause for wonder as well as condemnation. If the perusal of my paper induces even one conscientious physician to seek more definite information upon this tremendously vital subject, my efforts shall not have been in vain. And now for my story.

At the age of 24 I had finished my medical and hospital courses and was ready to begin my career. My plans had long been formed

with reference to entering the army as a surgeon; the decision having been made for two reasons, first as a matter of predilection; secondly, for lack of means to sustain me during the time usually required to establish a private practice.

Then a tragedy occurred that blasted my hopes for the army and altered my entire future.

The examinations were scheduled for the late spring; in January I had come down from my home in New England to New York to complete some clinical work. Generally, I was in bad shape, and about that time I began having attacks very suspicious of angina pectoris. Finally I consulted a great specialist, who after thoro and repeated examinations, frankly told me that from overwork and long hours of study my heart had become enlarged and badly disordered functionally—that I need never hope to pass the physical examination required for entrance to the army. He prescribed rest and freedom from care—two remedies entirely beyond my reach.

It was then that I went to a far distant city in the West to begin my career on a small amount of borrowed capital. It would be useless to dwell upon my struggles, hampered as I was by lack of funds and ill health, but in due time I became established. During the first few years my heart attacks were infrequent, but as work increased they returned, especially after an attack of typhoid fever which left my heart in a most disturbed state. Naturally, all remedies were tried with an occasional rest, but to no avail. One night after a very trying day I was called to an obstetrical case; while hurriedly dressing I felt the premonitory symptoms of a heart attack; it was then in a state of desperation I took my first hypodermic. The attack was aborted, but the next day I was desperately sick. I may here add that at no time did I ever experience any of the ecstatic sensations described by some from a dose of morphine—it steadied my heart, but for some time after it was followed by a general malaise.

My obstetrical work increased rapidly and I frequently found it necessary to resort to the one remedy that proved efficacious. As was natural the time came when I found that the daily necessity had become fixed.

Having been taught that it was only a habit that required self will and force of character to abandon—both of which I knew I possessed—I was not particularly worried, as I had planned a long vacation when summer came, which I would devote to the accomplishment of my purpose. But for certain unavoidable reasons the vacation became impossible, and the next winter found me with added responsibilities.

During all this time I had constantly struggled against the increase of the drug. If under great pressure I was obliged to take an additional amount, as soon as it was over I began to reduce. There were occasions when I succeeded in taking only a fraction of my accustomed dose, but if a call came, I was either obliged to refuse it, or resort to the needle.

While naturally I had taken no one into my

confidence, the habit had been so insidious and gradual that I had failed to realize how necessary it was that it should not be suspected. I did not consider myself an addict and only awaited a propitious occasion to relieve myself of it, but that winter I awoke to the realization that some radical step must be taken or my professional reputation would be damaged.

In the midst of this perplexity I developed an attack of la grippe and judging from past experience I felt that I would be confined to the house for some time, so resolved to take advantage of the enforced rest and abandon the use of the drug.

It was a hazardous and probably unwise decision, but I reasoned it was for the best. At the end of three weeks, after days and nights of physical and mental torture, I was able to leave my bed, freed from the specter that had haunted me, but for the time a wretched type of humanity. Four weeks of rest in the country enabled me to return to my practice, and altho the heart attacks mercifully remained in abeyance, it was only by sheer force of will that I could accomplish my routine work, resting every spare moment that was afforded me, often refusing calls.

At the end of six months my work had so increased that the heart symptoms began to trouble me. The situation was desperate. Besides a wife and two children depending upon me I had other obligations, and was still in debt from my illness. I was unfitted for any other form of business.

I shall not enter into a discussion of the ethics of my act, but after sleepless nights of deliberation I reached the decision to return to the remedy that alone would enable me to attend to my duties, knowing all that it involved, but hoping that by constant vigilance to lessen the baneful effects of the drug until some day when I should be free to leave off work and again be cured.

During the years that followed, this object was ever before me, always fighting against an increase, devoting my vacations always to the same cause. In a measure I succeeded. I never progressed to extremely large doses, and I watched for and combatted any possible symptoms of peculiarity or degeneration that are supposed to obtain with the addict. I felt no sense of moral inferiority or degradation, nor did I deplete my strength with useless anticipation of dreaded possibilities. I would do all that lay in my power to preserve myself and the future lay in the hands of fate.

During these years success came to me. My clientele grew both in size and character. Positions of trust were conferred upon me, such as the examinership for some of the most important insurance companies, presidency of the County Medical Society, etc. I was elected visiting physician to two of our largest hospitals, and for some years did special work for the federal government, the nature of which for obvious reasons I do not care to mention.

In mentioning these facts, I do so with no vainglorious idea of boasting, but simply to record the history of my career. At the same

time I used sometimes to ponder over the anomaly of my position—realizing with what horrified promptness the public would strip me of my honors, and transform its patronage and good will to contempt and pity, if it suspected the truth, altho from its continued patronage my work was evidently entirely satisfactory. Even my intimate friends would shrink from me if the truth were known. Yet my philosophy and natural optimism sustained me.

It was at the end of about fifteen years that my circumstances were such that I felt in position to leave off work and take the long anticipated "cure." The institution selected was one whose methods seemed most reasonable. I stated to the specialist that I was anxious to be cured as rapidly as possible, and was willing to undergo whatever was necessary, to the limit of my endurance.

The three weeks that followed I remember as a horrid nightmare of mental and physical agony. The method was not intended to be harsh, and the physician was well-intentioned, tho far from scientific.

In my desire for rapid recovery I overestimated my powers of endurance and my nervous system sustained a shock from which it has never recovered, but I persisted, with the assistance of my wife who remained with me and without whose assistance I should have lost my reason.

When I left the sanitarium I was no longer an "addict," but a wretched neurasthenic. Naturally the possibility of returning to my practice in this condition was not to be thought of so I began making plans to spend the winter in southern California. Here again the fates interposed. It was the autumn when the sudden financial panic swept the country, wrecking the fortunes of so many and tying up the resources of so many others. I was among the latter. There was nothing for me to do but to return to practice which I did after a further rest of six weeks—I need not add that in a short time I was again depending upon the drug to sustain me in the work that I was obliged to resume.

During the next five years I directed every energy towards shaping my affairs with the one end in view—that of retiring from practice and getting permanently well. By this time my two sons had finished their education and were established. My income was sufficient to provide us with the comforts, if not the luxuries of life. So with a heavy heart, but with a feeling of gratification, I abandoned the practice that I had acquired and sustained thru so many years of bitter and sometimes heart-rending struggles.

My hopes for speedy restoration were doomed to disappointment. I should have realized that when release suddenly came from the long years of daily combat with so powerful an antagonist, a decided reaction must be the natural sequence. It came in the form of an almost complete prostration, that only by force of will prevented from permanently overcoming me; but more than two years elapsed

before I felt equal to the effort of again submitting myself to treatment.

This time I selected a well-known specialist in the Middle West. I bared my entire life to his scrutiny, placing myself absolutely in his hands. Forty-eight hours as an inmate of the institution convinced me that I had made an unfortunate selection; but from a sense of false pride at being a "quitter" and a belief in my own powers I remained. The methods were absolutely crude and unscientific, the food poor and unsuitable, and the entire environment unfitted to the well being of such patients as I was.

At the end of seven weeks I was visited by the one most interested in me, who took me from my bed, from which I could not have arisen without assistance, and brought me East. It is true that the amount of the drug that I had been taking had been reduced to a very small amount, but at the expense of a badly shattered nervous system which required many months to regain even its partial normal status.

This fall I am in New York and have placed myself under the care of a physician who, while not claiming to be a specialist has, in my opinion and the opinion of many others, the clearest conception of the meaning of drug addiction and its pathology. His opportunities for the study of these cases have been most unusual. His methods are both humane and scientific. Thru him I have the hope that should time be allowed me I shall when I am summoned to the great unknown, be freed from the chains that so long oppressed but failed in the end to overwhelm me and compass my ruin.

DRUG ADDICTION FROM THE VIEWPOINT OF AN AFFLICTED PHYSICIAN.

BY

A PROMINENT MEDICAL MAN, LONG
A HEALTH OFFICIAL OF AN
AMERICAN CITY.

Maximum efficiency of every individual member of this Nation is necessary today as never before in its history. Hence any condition responsible for lessened efficiency on the part of thousands of citizens is a thing to be seriously considered, especially when among these are to be found a large proportion of men and women who would otherwise be useful workers in every important field of activity.

Addiction to narcotic drugs is today depriving the country, either wholly or partially, of the services of thousands of individuals who but for this handicap would be entirely fit (many of them preeminently so) for work of the utmost importance. This is a problem of the first magnitude and one which will have to be solved largely by the medical profession.

But the medical profession as a whole is utterly lacking at the present time in such knowl-

edge of addiction as is needed to enable them to attack the problem. For these reasons I feel it to be my duty to do my "bit" as a medical man, to put on record some of the lessons which, from years of personal experience, I have learned as to addiction itself, and the methods of treatment with which I have had experience in my efforts to be cured.

The subject is too important to excuse anything but the utmost frankness in speaking of the serious misconception which medical men only too generally share with the masses in regard to the subject of addiction. Unless the profession realizes its own ignorance, all point will be taken from the appeal which I wish to make to the physicians of this country to lose no time in equipping themselves to deal adequately with this great problem.

It may well be imagined that the task which I have thus set myself is no easy one, viewed from any one of half a dozen angles. Yet, if I am correct in believing that I can thereby make a small contribution to the cause which now means so much to all of us, I must do so regardless of every difficulty.

Addiction with me goes back a number of years, covering in fact, almost my entire career as a physician. During this entire time, as will be more fully referred to, I have tried cure after cure, besides having, time and again, sought by own efforts to rid myself of this burden. I have naturally during these years studied and thought much about the problem which has meant so much to me. All this by way of showing why I believe that my experiences and opinions should have some value.

First of all, let it be clearly understood that the addiction which I shall discuss is limited strictly to opium and its derivatives; first, because my own experience is limited to this group and, second, because much that I shall have to say does not apply to all so-called habit-forming drugs to an equal extent, and to some of them not at all. Addiction as thus limited is as true a disease as any with which the human body is afflicted.

To look on the opium addict as a man with a vicious habit which he could quit if only he truly cared to do so displays a profound misunderstanding of plain facts. As well claim that a man with typical malarial infection has simply become so accustomed to having chills and fever at a given hour on certain days that when this hour arrives he quakes thru mere habit as to claim that the equally characteristic and even more pronounced and distressing symptoms which manifest themselves when the addict is deprived of his drug are due to habit, that is, to "a condition which by repetition has become spontaneous."

We would, as a matter of fact, be less absurd in the former instance than in the latter; for we could argue the case out with our malarial friend, telling him he could conquer his "habit" by the exercise of will power, and—provided we argued long enough—we might convince ourselves that we were right because he would cease to shake, his fever would subside and, until the next crop of parasites was turned loose in his blood stream, he would to all in-

tents and purposes feel a well man, while in the latter case the more we talked of habit—that is, the longer the addict was deprived of his dose—the plainer would become the picture of a disease-racked body and a tormented mind.

I do not, of course, mean to offer the above comparison as either perfect in itself, or as sufficient to establish the claim that addiction is a true disease. The fact that it is a disease has impressed itself on all competent observers of a sufficient number of cases, and must be accepted. Yet it is astonishing to find that many educated physicians do not know this, while an even larger number, tho readily admitting that addiction is a disease, nevertheless show, both by their manner of discussing the subject and by their attitude towards addicts seeking their advice, that this is little more than a verbal concession on their part.

If, however, it be argued that the contention as to addiction being a disease is vitiated by the fact that an occasional addict stops taking his drug by "will power," that is, without taking treatment, we can point to an even larger proportion of mild cases of malarial fever in which spontaneous cure has come about. But this does not prove that the one, any more than the other, is not a disease.

Indeed, there could be no stronger argument in favor of the fact that addiction is an actual disease than the very phenomena presented by the occasional addict who stops taking the drug by "will power." Neither medical writers nor literary geniuses, whether themselves addicts or mere observers, have yet succeeded in presenting a true picture of the tortures which this involves. There could be no greater error than to regard cure as dating from the time the last dose was taken. When, in these cases, cure comes at all, it is only after weeks, or months, of horrible existence, during which kind nature brings about a more or less complete restoration of body and mind not alone from the disease of addiction, but also from the profound shock of unskilled or unwise withdrawal. Will power has enabled the addict to abstain from taking the drug, while nature cured the disease.

There has been no time during all the years of my addiction that I have not earnestly longed to be free from its clutches. This is sufficiently proved by the many efforts which I have made to find a cure, each time at great personal sacrifice and expense, each time only to have my hopes shattered, after untold suffering and fresh disillusionment.

But a real cure I have thus far been unable to find. I have tried everything that seemed to offer a chance: gradual reduction, self-conducted and at institutions, the Keeley cure several times, and since then all of the vaunted cures, as each appeared in turn, advocated by men of high standing in the medical profession. Concerning this last class, I have each time hoped that such men could not be totally in error as to the practical results of their methods, notwithstanding what has seemed to me the most bizarre pathology on which they have claimed these methods to be based.

I might, perhaps, have been warned by cer-

tain palpable danger signs, but I have been too anxious to find the cure. I cared not at all how mistaken their pathology; for I could not believe that men of such standing could be equally mistaken as to the success or failure of what went on under their very eyes.

And right here let me set down what has impressed me as inexcusable neglect of these cases by most of these self same "big" men of the medical profession. One after another I have found physicians who receive and undertake to treat cases of addiction brought to them by the lure of high professional reputation and medical articles in which is painted a glowing picture of some new and wonderful cure. And, one after another, I have found these men of high professional standing giving to their cases not even enough time and attention to enable them to form an intelligent opinion as to their condition and progress, much less what would be needed for the proper study and treatment of one of the most difficult and distressing ailments which afflict mankind.

Moreover, comparing notes with medical men who have been fellow patients under similar circumstances (many of them, I may remark, of the highest type, as men and as physicians), there has been among us a universal sense of shame and indignation that men with such reputation and standing should lay the medical profession open to the justly founded criticism of extortion and neglect of duty, frequently of seemingly rank commercialism, even including the splitting of fees with quacks and charlatans of the worst sort.

In saying that I have found no cure, I do not mean that I have never succeeded in getting to the point where I could get along for shorter or longer periods without the drug. Many times I have succeeded by myself in gradually reducing the dose to a minimum and then making the final plunge and taking none at all for some time. What this has meant I will not undertake to describe. Several times I have managed to keep from using the drug for a while after taking treatment of one kind or another. But have I been cured?

Let no one thoughtlessly reply that the very fact of my having on each of these occasions reached a point where, according to my own statement, I was able to live without the drug, constitutes proof that I was cured, or that when I started to use it again I was merely yielding weakly.

What has actually happened has been this. Each time that I have succeeded, in one way or another, in reaching a point where I was no longer taking the drug, I have, even while the suffering was still acute, been filled with a sense of happiness and hope that enabled me to stand it thankfully. I have argued with myself that, being then able even to exist without the drug and, for a while finding this existence day by day a little less of torture, I might reasonably hope for continued improvement. I have not expected miracles, but I have felt that each week should be easier, until, after a period of some few months, I should again be normal.

But this has not come about. Always I

have reached a point where progress seemed to stop, and beyond this point my system refused to react. Occasionally this standstill has been quickly reached, that is, I could not react beyond a point where I was unable to sleep, where my legs ached atrociously, and where I was so completely unstrung that life was unendurable. At best, progress has continued for a few weeks, after which, tho resting well, having a prodigious appetite and not undergoing marked physical suffering, I have actually been far from normal. This was shown, on these special occasions, chiefly by my inability to do satisfactory work, by my tiring altogether too easily and by a general feeling of unrest and disquietude.

I realize the difficulty of so describing my condition during these most favorable occasions as to show at all convincingly that I was not actually cured and that, in consequence, my resuming the taking of the drug was anything but a relapse. This, however, I must not attempt to do, since the main contention which I wish to make is here directly led up to.

And, hard as is the whole task I have set myself in writing this account, this special part of it is peculiarly difficult, involving the risk of appearing to set a false value on certain personal considerations.

My life has been an active and useful one. I have done work which I know to be good and which has brought recognition. Successful work, even in a given line of endeavor, is not always due to the same qualities in different men. My own work has been characterized by the exercise of careful judgment and the power of accurate analysis, qualities which I have always been credited with possessing. Now, after the most favorable of the so-called treatments which I have taken, and after allowing considerable time for complete recovery, I have in no instance regained these most essential requisites for my work, and thus I have been placed in a position where I would either have had to discontinue my work, or else do the only thing which made the resuming of that work possible. And always there has been the absolute conviction that this state of affairs was due to my not having been actually cured. On this point there has not been one iota of doubt.

Perhaps if I had been able at such times to take a complete rest of six months or even a year, I might have been fully restored, but this has not been possible. I have not been able to remain away from work for over five or six weeks after the "cure" proper, and even this has, as may well be understood, been a severe drain, when I have taken some cure or other at as short intervals as I could manage to get together sufficient funds and the opportunity to leave my practice.

Of course it may be argued that, rather than return to the use of the drug and thus again be able to live a life as nearly approaching normal as is possible for an addict, it would be better to refrain from using the drug, even tho this involved never again being able to do those things which, to the ambitious man, are

essential to make life worth the living. I submit that it is a high motive and not a low one which makes a man willing to pay the price rather than live a vegetative existence when he knows himself capable of better things. To understand this point of view it must be remembered that the addict gets no rosy dreams, no wonderful journeys into a beautiful and unreal world, no artificially enhanced powers beyond those of the non-addict, but at best only such equanimity and energy as are the latter's happy possessions.

My point, therefore, is that my resorting to the drug after having stopped its use a number of times does not mean that I have many times been cured, and many times relapsed, but that I have not been truly cured. When the latest "cure" which I have taken has left me, even after weeks, still suffering acutely and continuously, and not improving in the slightest so far as I could see, I have taken the drug again for relief from torture no longer bearable. After "cures" which have left me in decidedly better plight but in the intolerable condition last described above, and with progress at a standstill, I have taken the drug only after calmly surveying the situation, and as the lesser of two evils.

I must reiterate my strong desire to find a cure, a real cure, one deserving the name; that is, a cure which will leave me normal, without need of the drug, and able to do the work which I must do in the world unless I am willing to be a slacker. But until I can find such a cure (and, in spite of my unhappy experiences, I will keep up the quest) I would have only contempt for myself as a physician and as a rational being if I failed meanwhile to make the best compromise possible, namely, to take each day, just as I would take thyroid substance were I suffering from hypothyroidism, a sufficient amount of morphine to enable me to attend to life's duties and to occupy in the world that useful place which my qualifications enable me to occupy.

One of the great hardships under which every addict suffers is the constant dread lest his affliction become known and he be branded a "morphine fiend," a term which should be prohibited, or at least never used by an intelligent physician. What this exposure would mean to a man of standing in his community I need not explain. This risk he must always run, but it would be robbed of some of its terror if the nature of addiction were better understood.

Therefore the law now existing in some states requiring the registration of addicts is little short of barbarous. So little possible good can be accomplished by this law that one is tempted to believe that its passage was not instigated primarily by honest, tho misguided, zealots but by quite another class. The addict, in his efforts to find a cure, has learned something of a class of men who, posing as public benefactors, are in reality a shrewd set of rascals, capitalizing the misfortunes of the addict most successfully. If such men were not the originators of the idea of registration, certainly they, and not the body politic, are its chief

beneficiaries, since it affords them an authentic list of prospective victims.

As for the effect of this law on the addict, it merely adds further to his dread of exposure. Think of the position of a man of prominence and respected in his community, having his own feelings as have other men, holding equally dear the sensibilities of those he loves, living under the constant dread that his necessities may any day force him to seek aid in a state in which his name will, as it were, be added to a rogues' gallery!

My plea is for realization of the great need for finding some means whereby the individual addict may get real relief and whereby addicts collectively may be restored to such condition as will render them capable of performing those services of which our country is now in need.

I am confident that I am understating the case when I say that nine addicts out of ten earnestly desire to be cured. Why should they not? They get no pleasure out of taking the drug, but only relief from intolerable suffering which they must otherwise endure. Hence to be free both from this suffering and from the necessity of getting this relief by artificial, and at present exceedingly costly, means is bound to appeal to them. Most addicts, I am confident, are willing to go thru whatever acute suffering may be involved in any really rational treatment which will, after a reasonable time, restore them to normal condition.

Experiences such as I have described above are, I know, the rule and not the exception with those who have tried the various so-called cures. They can hardly be called satisfactory. Even admitting that they may prove successful in a small proportion of cases, relatively few addicts are able to find the means of taking them, such as I have been able to make for myself in the midst of a very active life.

Surely a disease having so definite a symptomatology and, I believe, so plain a pathology, must be susceptible of rational cure. That such a cure has not yet been found by those who so loudly proclaim to have found one I honestly believe. Whether others have devised more promising lines of treatment I frankly do not know.

But a cure must be found which does more than any I have succeeded in finding. In what other disease would a patient who, after reaching a certain point, beyond which he could not progress towards recovery, be told that from then on everything rested with him, altho he himself knew that his need for help was really as great as it ever was? In what other disease would any physician worthy of the name calmly tell a patient that, having taken a "cure," he was, *ipse facto*, cured, and become highly incensed when the patient pleaded that his condition was in many respects more desperate than before treatment?

The medical profession must seriously study addiction. Of material there is, unfortunately, an abundance. Some high authority should see that every facility is afforded the proper persons for employing it. It is not unlikely that

many of the "cures" which have been advocated have in them some elements of good, properly selected and properly applied in each individual case. Possibly competent investigation, furnished with every facility, might result in the discovery of a truly specific cure. I have long thought that there was such a possibility in more than one direction, but investigation of these would involve very careful and laborious work, as well as considerable cost. Here indeed, would seem to be a wonderful opportunity for philanthropy.

But while such a specific cure would be an untold blessing, we need not find one in order to meet the situation—at least, much more successfully than it is being met at present. Co-ordination of the entire problem of addiction, in the hands of the few men whose work in this field is most promising (and the men I have in mind are not those with whose vaunted cures I have had such unhappy experiences) would almost certainly lead to valuable results.

While every effort should be exerted to determine the best lines of treatment, meanwhile there is a great deal which should be done in other directions. Let the medical profession help in bringing about better understanding of addiction—first, of course, learning this themselves. Until the addict can be offered rational treatment, the profession should do what it can in making the lives of addicts less unbearable by removing from the public mind some of the gross misconceptions concerning addiction, seeing it to, especially, that these unfortunates are not stigmatized as "morphine fiends" and that they are given the means of obtaining, without risk and hardship and almost prohibitive cost, the supply of their drug which, until they are cured, is to them as necessary as the air they breathe.

But the finding of a real cure or treatment—not necessarily specific, not a thing to be applied indiscriminately in every case, but a rational method of handling addiction as other well known diseases are handled—is the great aim, or, if it be that sufficient is already known by some men in the profession as to the rational handling of addicts, let these men be found and their services subsidized by the government and used to the fullest extent, in teaching others, and these still others, until there is built up a system extending over the entire country, capable and equipped for giving to every addict the opportunity for cure. This is a crying need in our country today. Surely there must be somewhere recognition of this fact and resources enough to make it possible for this need to be supplied.

Cirrhosis of the Liver.—The capacity of animal extracts to stimulate the function of the corresponding organ and, in a degree at least, to favor its regeneration, has led to the use of hepatic extract in the treatment of cirrhosis of the liver.—Harrower.

A PLEA FOR THE BROADER CONSIDERATION OF NARCOTIC DRUG ADDICTION BY THE MEDICAL PROFESSION.

BY

A PRACTICING PHYSICIAN WHO HAS MET THE PROBLEM IN HIS OWN FAMILY.

In view of a recent experience of mine in seeking intelligent medical help for a near relative whom I learned was a narcotic drug addict, I take pleasure in recounting experiences of the past few months in the handling of such a case, and in calling attention to the conditions which my investigations have shown me to exist in our profession.

My line of professional activity had not brought me knowingly into touch with narcotic drug addiction, and I entertained the prevailing medical opinions in regard to it.

About five months ago I received a letter couched in apologetic language from a practitioner in another state informing me that a younger brother of mine had been under his care for a number of days suffering from withdrawal symptoms occasioned by inability to purchase morphine, and advising me to place him in some institution where he could be restrained.

I immediately began asking my colleagues where I could send such a case, and was amazed at the general lack of knowledge in regard to and sympathy for these unfortunates. In truth no one could point out a single institution where such a patient could be sent with any hope that he might be handled in a humane and intelligent manner.

My investigations of the institutions they suggested showed this to be the fact.

Most everyone seems to regard those suffering from this condition as being of a lower order of humanity, unwilling or too weak-minded to help themselves and fit subjects only for association with what is commonly known as the "underworld." I wish to say that I myself have undergone a very complete revision of mind regarding these cases since the case of my brother has compelled me to investigate them. I have known my brother too well and for too many years to believe that he can possibly be placed in any such category.

I have made careful inquiries into the circumstances and origin of his addiction, and the results are absolutely convincing that the first administrations of the narcotic were to meet therapeutic indications and were continued without his knowledge or appreciation of its actions or ultimate results. I know that he has never experienced any pleasure from the narcotic, and I know that when the condition of addiction manifested itself he did not know what was the matter with him. He only knew that narcotic relieved intense suffering. I had never seen a case of addiction to my knowledge before I went to see him in response

to the letter I received. The clinical symptomatology of withdrawal of an opiate was truly a revelation to me. That the condition from which these patients suffer is a distinct disease cannot be questioned by any intelligent observer.

I have found that the majority of patients who begin the use of opiates do so in search of relief from pain, and are not aware of the fact for a long time that the suffering they endure when the drug is discontinued is due to a disease they have contracted. Apparently the medical profession is also ignorant of this fact.

A more pathetic sight I have never seen than one of these patients who has been suddenly deprived of his medicine. They will tell you that they will become insane or be driven to suicide if they cannot obtain relief from their suffering. Hence their willingness to obtain the drug at any cost. I have come to believe that any man is justifiable in lying or stealing to escape the agonies I have witnessed.

It seems a crime that we of the profession have gone so long without any attempt to study or understand the disease which we in our daily rounds are constantly creating. Certainly our standard medical literature contains little if anything of value in regard to this condition, and investigation of the claims and procedure of the widely advertised so-called "treatments" and "cures" readily convinces one of their unworthiness.

I know that much can be done for the cure of these patients by an intelligent effort on the part of the medical profession, and a willingness to open their minds to the clinical facts of this condition and to handle it like other diseases.

In search of information I have gotten into touch with cases of addiction other than my brother's, and I find that the majority of them are desperately anxious to be cured. They tell me, however, that institutions such as jails, workhouses, lunatic asylums, alcoholic wards of the charity hospitals, and those that they have tried of the advertised cures are places of insufferable torture from which they emerge in worse condition than that in which they entered.

There are estimated to be as many as 500,000 or more addiction cases in the State of New York alone. I ask in all earnestness, is it not worth while to try to do something more than we are doing for these sufferers?

Arteriosclerosis.—Iodine can greatly benefit the condition of arteriosclerotic persons (*Critic and Guide*). In combination with a preparation of iodine the use of nitrites has been advised. Nitroglycerine in the intervals between the iodine treatment is also recommended. Besides inorganic iodine, try organic iodine preparations, such as thyroid extract, the principal element of which is iodine.

THE COMMENDABLE WORK OF THE NATIONAL COMMITTEE FOR THE STUDY AND RELIEF OF DRUG ADDICTION.

The rapidly growing appreciation on the part of public-spirited people of the gravity and menace of narcotic addiction is notably demonstrated by an organization recently instituted by a number of well-known philanthropic individuals, and called the National Committee for the Study and Relief of Drug Addiction.

This organization commends itself to everybody who honestly desires to see correction of the narcotic drug conditions which at present so seriously menace the public health and welfare. This organization is starting from a point of vantage which has been occupied by no other organization dealing with the subject. It has nothing to unlearn before it can appreciate what it sees, and what comes to its attention. It realizes that there are many sides to the subject of addiction, and that from the work of those who approach it in each of its many aspects there is available a wealth of information, which it is urgently desirable to obtain. It appreciates that it is entering a fresh field, that of unbiased and *ex parti* consideration of a very complex and most urgently important municipal, state and national problem.

Its offices—47 West 42nd Street, Room 421—will provide, what has for a long time been sadly needed, a clearing house of views and of information—a neutral ground where the afflicted, physicians, legislators, administrators, officials, police and otherwise, can find collected material from all sides of the question.

It is, moreover, accomplishing immediate relief and improvement of the condition of numerous addicts, by bringing together those who differ in viewpoint, but not in common desire to help, and whose separate efforts, in consequence, are being made more competent by better appreciation of the influences and factors beyond the sphere of their immediate activity.

More than this, this Committee's offices are providing a place where the harassed narcotic sufferer can go and obtain intelligent, humane consideration, with such advice and help—medical and otherwise—as he or she may need.

The local office of the Department of Internal Revenue has recognized the value of such work, and the disinterested motive and work of this Committee, by referring to it those who apply to the Revenue Office for help.

The Committee is enlisting the cooperation of a constantly increasing number of practicing physicians who are willing to do their part to afford immediate relief, and then give such subsequent aid and assistance to an unfortunate class, as may lie within their power.

This Committee promises to be one of the most important forces in developing a sympathetic interest in the problem and paving the way for the ultimate determination of its successful solution. That it seeks all possible cooperation and support from the medical profession, as well as from all other organizations and agencies, is apparent.

The preamble from its constitution, and a circular letter which has come to the office of AMERICAN MEDICINE, so well define and state the purposes, aims, and present status of this organization, that we take pleasure in reproducing them for the information of our readers. We are especially told in addition, that any physician, who requires information as to the legal or other questions in connection with his treatment of narcotic drug patients, will be gladly offered the facilities and rapidly accumulating mass of information possessed by this Committee, and will be assured of every cooperation for himself and his patients, whether these patients are indigent or otherwise.

The Chairman of this Committee is Mrs. Julian Heath and the Secretary is Mr. William H. McGraw. Medical men who realize the desirability of enlisting the aid of the intelligent laity in overcoming the evils of habit-forming drugs should call the attention of their lay friends to the laudable aims and commendable work of this National Committee for the Study and Relief of Drug Addiction.

CONSTITUTION OF THE NATIONAL COMMITTEE FOR THE STUDY AND RELIEF OF DRUG ADDICTION.

Preamble:

Whereas it has now become an established fact that many thousands of human beings are

suffering from the disease known as narcotic drug addiction, and

Whereas it has also become an established fact that a very large number of those so suffering are honest and deserving people worthy of assistance, advice and relief, and

Whereas there is now apparently no adequate municipal or state or other provision for such relief, nor is there any privately conducted organization for such purpose, and

Whereas the Report of the Whitney Joint Committee of the State Legislature emphasizes the above stated conditions and urges the establishment of some immediate relief, and

Whereas such work in study and relief as has been done has been limited to individual effort on the part of a very few, and is entirely inadequate to meet the growing demand, and

Whereas, the work done by the few individuals who have undertaken it in individual cases has become a burden upon them in money, time and energy which they can no longer meet;

It is hereby resolved that some organized effort be undertaken which will first provide such relief as can be immediately afforded; second, will obtain information which will result in better understanding of the situation, and third, provide some dependable foundation for the development of successful measures overcome the evil of drug addiction.

OFFICE OF THE NATIONAL COMMITTEE FOR THE STUDY AND RELIEF OF DRUG ADDICTION.

47 West 42nd Street, New York City, Room 421.

To Whom It May Concern:

This Committee asks your consideration of the following:

Recent and authentic contributions from medical science have completely overthrown past conceptions of the narcotic drug sufferer.

The valuable work of the Whitney Committee, appointed the past year by the New York State Legislature for investigation into narcotic drug conditions, uncovered conditions and facts which are startling and tremendous in scope, application and extent. The Preliminary Report of this Legislative Committee revolutionizes previous understanding of the condition, and demonstrates the terribly urgent need for immediate relief, remedy and help.

This situation has been brought to our attention as one needing humanitarian, economic and civic endeavor—for the study and relief of the present situation.

We have therefore organized the above Committee. The objects of the Committee are:

1. To determine facts regarding the use of narcotic drugs.
2. To investigate conditions surrounding the drug user.
3. To study the factors—individual, sociological, economic, public sentiment, medical and legal—in the origin, development and growth of existing conditions.

4. To cooperate with all agencies active in the handling of the situation and in helping the sufferer.

5. To analyze and correlate all information obtainable upon the subject.

6. To devise means for the immediate relief of the sufferer.

7. To devise means looking towards the permanent relief of the drug addict and the elimination of the drug evil.

The part played by narcotic drugs in recruiting young girls for White Slavery, and in keeping them there, has been brought to our attention. We have every reason to believe that the facts of this relation between narcotic drugs and White Slavery has not been at all appreciated. The inevitable and intolerable physical torment which follows denial of narcotic drug to one who has developed the disease of narcotic addiction easily becomes a weapon of coercion and bondage whose power is beyond belief.

The vast numbers of honest and innocent addicts who have contracted the disease of addiction thru no fault of their own—results of misguided or unavoidable medication, etc.,—desperately seek and need advice, assistance and sympathy. They and their families, under present conditions, have apparently nothing to turn to in which they have not already lost confidence.

We have information that the present war conditions and the raising of the army is causing many sick addicts to be drawn into conditions which are detrimental to military efficiency, and pitiful for the sufferer. We have also information that the necessary administration of morphine and other opiates to sick and wounded at the front is causing numbers of new addicts to be made, and this terrible disease to be implanted in many of our defenders.

We have information that the actual narcotic conditions in connection with the forces in Europe are matters of grave fact, unavoidable concomitants of necessary opiate administration for protracted periods—conditions in which our own soldiers will share.

Our Committee is trying to do what it can to force realization of the situation and to secure remedy and proper scientific and humanitarian handling.

Our work is absolutely unassociated with any enterprise working for profit.

Our work is purely humanitarian and educational in its aims and conduct.

Our work is supported entirely by voluntary contributions.

Yours truly,

NATIONAL COMMITTEE FOR RELIEF
OF DRUG ADDICTS.

Address correspondence to Wm. H. McGraw,
Secretary.

The Anesthetist.—The anesthetist must be a man who has a wholesome respect for ether and chloroform, altho not afraid of them.—*Exchange.*

"THEY SAY."

BY

LEGRAND KERR, M. D., F. A. C. P.,
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Consulting Physician to Children's Department of the Caledonian, Williamsburgh, Swedish, Bushwick, Rockaway Beach Hospitals, Industrial Home for Children, Society Prevention Cruelty to Children (Brooklyn) and Visiting Physician to Children's Wards Methodist Episcopal Hospital.

"They Say."—A year ago, while in the home of a friend, I had occasion to express in forcible terms what I thought of some suggestions that were based upon somebody's say-so. I then remarked that some time I would write an article and call it "They Say." This immediately brought to my friend's mind an incident that apparently had been forgotten. Some twenty years before an Episcopal minister had stated to him that over the entrance to a college at Aberdeen, Scotland, there was this inscription:—"They Say. What Do They Say? Let Them Say." And his comment upon it was: "They say is always half a lie." It was this comment that fixed itself and the inscription upon the young man's mind, so that after twenty years my remark brought it to the fore.

If what I write would leave its impress for twenty months or even twenty weeks upon the minds of anxious parents of little patients, it might help to reduce over-anxiety and increase self-confidence to the lasting benefit of many little ones.

For a long time I have been impressed not by what "they say," but its results. Doubt, uncertainty, anxious thought and needless worry are often added to an already disquieted mind. The confidence that should exist between patient and physician is strained and the efficient management of the patient interfered with because of what "they say."

Who Are "They"?—Apply the test of questioning definitely as to who they are when the statement "They say" is made and you will find that in most instances they remain unknown, impersonal, undiscoverable.

We must give credit that in some instances what they said was stated under peculiar circumstances and often was a comment in regard to that particular circumstance. They meant it in no other way. But it is human to repeat and so what they say is repeated and loses nothing but accuracy in the repeating, until the identity of the originator is lost and nothing remains but a much garbled statement; a statement that gives birth to other monstrosities like itself but which can claim no known parentage.

With loss of identity there is no hope of disputing the repetition of what they say. Altho the next person adds to it or distorts it, the first cannot defend it. Passed from one to another it becomes less and less like the original statement, even tho the authority of the first person is always tacked to the statement by each successive repeater. It is these later statements; these twisted, unreliable opinions and advice that anxious parents are asked to accept and act upon as authoritative.

What Do "They" Say?—They say innumerable things and it would not serve our purpose to attempt to enumerate them. It will suffice to take a few common illustrations.

They say that children outgrow things so one need not worry. This common belief is most disastrous in its results. Believing it, parents comfort themselves with the notion that with increasing years will come decreasing physical deficiency. This is as unfortunate as it is unfounded.

It lessens the chances of the child receiving adequate relief. Apparent improvement which comes with time is due to some other organ or part taking up the work of the disabled organ or part. This is not "outgrowing" a defect; it is the substitution of the work of one part for another. It can never result in full efficiency. The relief of any physical disability cannot be safely left to later years.

They say that there is a change in the child at seven years. This is probably based upon the old belief that the body tissues were renewed once in seven years thru natural waste and repair. This notion is almost as unfortunate as that in regard to outgrowing defects, because it results in the same kind of neglect. It often means that the child approaching his seventh year is denied efficient care for his illness or disability.

They say that if a bad habit is broken up quickly it will result in nervous troubles. No bad habit can be broken up too quickly. The common fault is that they are allowed to persist too long. Their early and immediate correction can have none but the most favorable effect upon the child's nervous, physical and moral efficiency. Not uncommonly nerve disorder is the cause of the bad habit and its persistence.

They say that oatmeal is heating to the blood and therefore it must not be used except in cold weather. This notion probably holds its life from the fact that in some individuals who are susceptible, oatmeal causes a rash. They jump immediately to the conclusion that it is heating. As a matter of fact, there is no article of food that will not at some time act in just this way upon some individual. It often taxes the resourcefulness of the physician to discover just what article in

the diet is causing the trouble in any particular individual. Fish, eggs and berries are more liable to do it than is oatmeal or other food. Athletes commonly partake freely of oatmeal water during the summer months while under severe physical strain; they could not afford to do so if it was heating.

They say that the second summer is dangerous. Any heated term is dangerous to the infant who is not in prime condition and properly nourished. The real facts are that more babies die during the first year than during the second or any other period.

They say that the baby must have colic for the first three months. Why a baby should be allowed to suffer for three months or three hours unnecessarily is hard to understand. Colic means that there is some fault with the food or the manner in which it is taken; in other words, it means indigestion and that must be corrected.

They say that a change of milk is dangerous. Sometimes it is dangerous not to change. The idea is prevalent that if the baby is taking so and so's milk in the city it will be dangerous to change to another milk in another section of the country. Clean, fresh milk is the ideal food for an infant who must be artificially fed and it does not make any difference who produces it. Change of milk or dealers is never harmful if the second product is as good as the first.

They say that the binder should be worn for many months because it keeps the stomach warm, prevents colic, colds and trouble when the teeth are erupted. It fails to do any of these. Even with careful adjustment, it commonly slips out of place, becomes soiled with urine, is often unsanitary and is of no service except to ease the

mind of some misinformed relative. The facts are that the binder is applied to hold the dressings to the stump of the cord and after the navel is healed the binder is of no service and the baby should not be discomforted by continuing to wear it.

They say that when the baby is teething—well, they say that anything may happen to an infant who is teething; anything from colic to collapse. It is an impossible task to enumerate what they say may happen. But teething is a perfectly natural process and unless the infant is suffering from malnutrition or some other condition that lowers its resistance, the teeth are erupted with little or no disturbance. If there is disturbance of any kind at this period, its cause should be sought for and corrected and in nearly every instance it will be found in the nutrition. And so we could go on indefinitely, but let us get to the next question.

Why Do "They" Say It?—What they say is often without thought of results. It is so easy and pleasant to exploit one's views that the habit is all too common. Advice is given upon subjects of which little or nothing is known. There is another factor of being first the recipient and then the projector of all kinds of advice until one becomes unconsciously a walking bureau of misinformation.

Frequently they say it because they derive a certain pleasure in airing their own or others' views that have appealed to them. More often, because of a loose use of language the habit is formed of misstating the misstatements of others.

Personal opinions are treasured things with most persons and yet the prodigality with which they are passed about or enforced upon others would not lead us to think so. When things are said because

of personal opinion it is not so bad. There is at least the possibility of identifying the author even tho the premises upon which he bases his opinion be wrong. There are many who experience real admiration for the opinions of others. When their physician is concerned it is hopeless. His opinion to them has rightly the stamp of authority but it always refers to a particular case under peculiar circumstances and bears no relation to the same case at another time or of some other person's ailment. To the distress of the doctor his opinion is peddled about as he never intended it to be and always stamped with his authority.

What Authority Have "They"?—In dealing with those who are ill it may be a serious matter to accept the views and suggestions of those who lack the authority which comes with long, wide and varied experience.

Personal experience as limited to the individual is of value to that individual for the future, but the value is individualistic and never general and therefore the attempt to force that opinion or experience upon another is unwise. What is one's meat may be another's poison.

And yet how common is the experience among friends and even chance acquaintances:—"You should not do that." "You should not eat this." "You need this, that or the other thing," and when the question is put "Why?" the answer is commonly the same:—"Because I cannot." "Because I cannot" is no reason why you or yours should not. In ill health the value of the other fellow's personal experience is practically nil.

The Right Attitude Toward "Them" and "What They Say."—The right attitude toward them is one of tolerance but

not encouragement. Their motive may be right; let us always assume that it is. Having shown courtesy and tolerance by listening (even tho it be with impatience), immediately change the subject without making any comment whatsoever. Comment is the dangerous thing because it gives encouragement to the other fellow and leads to what may be an endless chain of advice. Without your comment, what they say falls flat and they are less apt to select you as their victim for future assaults. The right attitude toward what they say is to pay so little attention to it that you will not be lead to repeat it. Certainly it cannot be distorted, enlarged upon, or finally impressed upon others as a fixed fact, unless some one (or several some ones) repeats it. Your duty is to refuse to become one of the links of an endless chain of misinformation.

The needs of the sick are not made lighter by attendants worried and distressed by promiscuous advice and suggestion. They are secured, however, by intelligent cooperation with the physician. It is safer to follow the doctor's rather than the neighbor's prescription.

A BURIED AND FORGOTTEN ART.

BY

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In June, 1916, I presented a paper to the Pecos Valley Medical Society at Clovis, New Mexico, which was published in *AMERICAN MEDICINE* in September of the same year. The paper appeared to arouse unusual interest from all parts of the country, and I have been requested repeatedly to present another paper along similar lines.

In the former paper I lamented the shameless and almost hopeless slough into

which the practice of obstetrics had fallen. Certainly I meant to cast no reflection upon many clean, able and highly skilful practitioners located in countless places thruout the country. But the art of obstetrics, as it is generally viewed and practiced in small communities, ought to be brought into the light without mercy and without favor.

During the past year I have, while recovering from a lingering attack of influenza, made it my business to make a quiet investigation of obstetric work covering a large region of country of variable width extending roughly from the southern end of Lake Michigan to the mouth of the Scioto River. I may say at the outset that all large centers of population are excluded from the picture as presented.

In many of the smaller communities the doctors are a fussy, bumptious, jealous, quarrelsome lot, who have degraded themselves below the level of honest washerwomen and who whimper and squall because they receive less than the pay of a trackwalker for their so-called services. I know that they read papers on interstitial nephritis and ovarian dermoids before meetings of county societies, and their skill in surgery is beautifully exemplified by the courageous and determined energy with which they attack a juicy pie with a dull table knife. Dr. Snodpouch is roundly denounced for soliciting obstetric work over an alley fence, whereas Dr. Taterface, a man of far more dignity and piety, stalks his game in the pews and anterooms of the church.

But, as grievously as the doctors fall below the level of idealism, what possible incentive have they to be anything better or different from what they are? A man who professes to be devoted to science is sneered

at as a snob and an impostor. Old Doc Grabrag, who was born in a pumpkin patch and has a head closely resembling a squash, has no fool notions about medical science; he was educated in a cornfield and picked up a world of medical skill by lying around a drug store—he, “kin granny a woman without battin’ an eye and never lost a case in his life.” Science is hated in the abstract and ignored in the concrete. A natural-born doctor is the man for the occasion under all circumstances. No devices of art, if you please.

Let it not be inferred that I look upon these rural dwellers as a brutal and indifferent people. The contrary is quite true. When a woman is known to be in the pregnant state the fact is first announced in the local barbershop, whence it drifts to the livery stable and ultimately to the grocery store and the sacred portals of the church. If the woman happens to be married and living with her husband, public opinion almost invariably lays the paternity at his door, not always graciously and sometimes with copious and inelegant floods of barnyard philosophy. In the case of unmarried women, the first question to be decided is whether she will marry the author of her embarrassment or “skip down to Detroit, Toledo or Cincinnati and get rid of it.” The competition appears to be very keen, the prices varying all the way from ten to fifty dollars. A woman practitioner in a small city between the source and the mouth of the Ohio River gave the abortion industry a tremendous blow by “jabbing a hole in the girl’s bladder,” as I learned from the night fireman in a pumping station in an Ohio settlement. A rumor, probably malicious, says that another girl came back from the “edge of Detroit”—Detroit has a

good many edges, it may be observed—with a dangerous attack of real blood poisoning.

And, speaking of social affairs generally, the copperhead snake is not more certainly the most dreaded of American poisonous reptiles; the skunk is not more decidedly the disseminator of the most penetrating and nauseous odor of all small quadrupeds; the bedbug is not more notoriously the most odious member of all domestic establishments, than the average country barbershop is easily the rottenest and vilest pocket in the lowest of all American sewers.

The unavoidable accidents of parturition are as frequent in country practice as they are elsewhere, but what sort of reparative work is to be expected at the hands of men who know next to nothing of the anatomy of the pelvic structures? In the first place, the average ruralites know nothing of science, care nothing about it in the second place and would not pay for it in the third place. They give the devil his due, they get about what they want in the first instance, and when years of suffering have brought the victim to the verge of helpless invalidism she is beset by a swarm of meddling mushheads who offer all sorts of advice, generally as worthless as it is voluble. Many rural practitioners are mere solicitors for some keen and plausible rascal who maintains at some distance what passes for a private hospital, where victims are fleeced under more or less polite forms of robbery.

In a word, in many if not most rural communities there is no demand for obstetric skill, and until there is such a demand there will be no supply. No man possessing high skill and honorable ambition for usefulness is going to idle away his years and dissipate his energies in vain efforts to grow grain upon stony ground or harvest figs from thistles.

INFLUENZA; WITH REPORT OF A CASE.

BY

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While the *bacillus influenzae* is necessary to establish the diagnosis of the disease absolutely, I believe in the majority of cases many different microorganisms are present. Moreover, I am sure that the disease follows two types. In the average type with laryngitis, fever, lassitude, etc., the patient always secures relief in a few days from the administration of benzoates, etc.

The case I desire to report was complicated and in several ways was quite unusual; yet I have seen other cases of similar nature. The patient was a female, a school teacher, who reported that she felt fairly well on Saturday. On Sunday she became chilled in a room which had been heated in the morning, and where she waited about an hour before dinner. Monday she went to the school room as usual, and during the morning had a decided chill.

When I saw this patient on Monday afternoon she had laryngitis, some dulness over the chest temperature 102° to 103° F., pulse increased in frequency, respirations 28. The respiratory symptoms increased and she developed bronchopneumonia with pleurisy. Her pulse became quite rapid, reaching 140 to the minute, her heart action was weak, and endocardial changes were evident. The pleuritic implication was chiefly over the right lung. The bronchopneumonia involved both lungs. An interesting feature was that the process could be traced over the different lobes. There was evidently considerable thickening of the pleurae, as typical signs were present.

The gastroenteric symptoms were quite pronounced, her abdomen being markedly distended from the beginning. There was great accumulation of gas, and frequent small fecal evacuations. She had the typical lassitude and muscular discomfort characteristic of influenza, some headache and the usual loss of appetite. Microscopic examination of the sputum showed diplococci,

presumably pneumococci, streptococci and staphylococci.

The usual treatment was given, *i. e.*, the administration of benzoates and salicylates in fairly good-sized doses, also suprarenal extract, later ergot and finally pituitary extract (posterior). The progress was very slow; the pulse remained high until the seventh day; there was slight amelioration of pain; the ninth day the temperature receded, but did not become normal. The disease has now persisted for seven weeks. The morning temperature is between normal and 99.5° F.; afternoon 100.5° F.

During the early stages of the infection typical pneumonic sounds could be heard over the chest; at one time only was there any bloody expectoration. Cough was quite pronounced, and evidently caused intense pain because of the pleuritic adhesions.

The case has seemed atypical in several respects. Two other members of the family later had attacks of la grippe with typical manifestations, but did not progress to pneumonia, nor were there any other complications. There is no question about this case being one of influenza of the most severe and complicated type.

No examination was made to determine the presence or absence of the colon bacillus. Possibly the continued elevation of temperature may be due to colon bacillus infection. The patient has received benzoates and salicylates, suprarenal preparations, ergot and the iodides, also the combined (stock) catarrhal vaccines. On account of the limited quantity of the expectorated material there would have been difficulty in preparing an autogenous vaccine, altho this method of treatment was considered. The chest was enveloped in antiphlogistic substances in the beginning. Oleate of mercury and iodine were later used. Following the external application of mercury oleate, pain from the pleuritic adhesions ceased.

Changes for the better took place slowly, each day the dulness became less and the sounds fainter. I could almost outline the various areas as the lung became clear. Of course, in cases of this kind absolute differentiation from tuberculosis is difficult. However, all the indications pointed to unusually complicated influenza. I do not be-

lieve the patient had any tubercular lesions. Examination revealed no pulmonary changes which might not have been produced by influenza, and I watched the patient very carefully. She was given strychnine and guaiacol carbonate; also laxative enemata, and various applications have been made to the chest.

Despite the extreme pleural pain and the rapid heart action, the patient showed no particular evidence of respiratory distress. When suprarenal extract was discontinued in the acute stage, she was given pituitrin. The usual evidences of acute suffering, emaciation, etc., never presented themselves. Her pulse rate kept from 98 to 110, and progress for the better was exceedingly slow.

March 1, 1917. Patient resumed her avocation (teaching) about the tenth week. No permanent sequelae remained.

SOME PROBLEMS OF MEDICAL PRACTICE.

BY

SPENCER R. STONE, M. D.,
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There are many people who seriously entertain the erroneous idea that physicians acquire a competence quickly and easily. In consequence thereof their bills often receive scant attention. For the benefit of those so deluded, let us look back of the scenes.

A man spends from \$2,000 to \$3,000 and four years time in the preparation for the practice of his chosen profession. He finds his finances depleted at this stage of the drama, yet instruments and office equipment are necessary, and he obtains them to the best of his ability; then the waiting game begins.

Having no conveyance, he decides walking will be beneficial to his health. Every time it rains, he has a call to one of the far corners of the town. He is surprised to learn how much more sickness there is at night than during the day. A few men pay him

cash, yet time proves it was often bait to establish credit; credit is what they all too often want that they may spend their money for other things.

Country visits are made in a hired conveyance for which he pays cash. The farmer states he will pay when he sells his potatoes or hogs.

Most of his patrons are people of whom cash is demanded by the other doctors.

The wife of the man who is really "good" calls to pay their bill, but before she leaves asks for a subscription for the library or guild; assuming that the settlement of a \$3.00 account certainly ought to be good for a \$5.00 subscription. Refusal is out of the question, even tho he may not know how he is going to pay his next month's rent.

Our friend gets to the point where he is kept zigzagging across the street to avoid meeting creditors.

He stops eating at the restaurant or hotel and takes his meals in his room, where bread, milk and bologna form the principal diet, with samples of infant food interspersed for a change. Manufacturers of infant and invalid foods have no idea of how many lives their samples save.

As practice increases there is no time left for sleep if all visits are made on foot, so a bicycle is brought into use; it not only enables the doctor to travel faster, but the frequent pumping up of tires develops the muscles of the arms and thorax wonderfully. The constant skidding in sand, mud and snow makes him an expert in hurried dismounting. All this tends to increase his vocabulary perceptibly; but the English language is so inadequate to many of the occasions concomitant with the use of a bicycle that he often wishes he knew some other.

Finally, conceding the necessity of a more

adequate conveyance he buys a used automobile. After running into a few people and trying to climb a telephone pole, he learns to drive. The tires had seen about 3,000 miles and begin to give out, making him think bicycle days were rosy in comparison. \$60 worth of new tires remedy this, however, and the thing is a joy—for a while. Suddenly the transmission begins to slip, the brakes give out, the carbureter needs a new float, the magneto goes wrong, the feed pipe wears thru and he is caught twelve miles from town without gasoline. The bearings are worn so the shaft knocks when the engine don't. The tires, lights and engine never all work at the same time.

The inside of some of the best homes is occasionally seen in a professional relation; tho it is for a slight ailment, false hopes are raised, for he soon hears that a member of one of these families has a protracted illness—but another physician is in attendance. He knows he is considered young and inexperienced. He is told he should marry; no family medical adviser should be a bachelor.

He finally loses a case and it causes more unfavorable comment than any death in that town for years. He loses no more for many a moon, for when one of his patients becomes critically ill another doctor is sent for who soon signs the death certificate, to the satisfaction of the relatives and neighbors.

After struggling along for years he has some staunch friends and patrons, and by working day and night, Sundays and holidays, accumulates a respectable bank account. His mail is now filled with propositions of the Wallingford style; he is inoculated with the get-rich-quick bacilli and survives with some beautiful stock certificates.

The doctor decides to take a wife, (some get one with money, the type we are dealing with does not). He has been told two can live on what he spends, but he soon learns he was misinformed, yet he has no regrets, for he finds a home and loving companion make life worth living.

A change in location is made in hopes of bettering his condition, and much of his accumulation is dissipated before he is established in the new place. The usual number of dead-beats secure his time and energy as well as causing him to wear out tires, burn gasoline and sweeten? his disposition. Hard luck seems to follow him. Though he keeps abreast of the times and is usually successful with patients, he just misses inspiring sufficient confidence to bring him the large and valuable practice few attain. He soon finds himself physically unable to do the amount of work formerly done; a little later he realizes he is considered a back number and soon hears himself referred to as old Doctor Blank.

Syphilis of the Liver.—Syphilis of the liver is a very able actor says *Med. Review of Reviews* (Nov., 1917) and often impersonates with surprising accuracy various other diseases.

Air-embolism.—When during an operation air enters a large vein there is a sucking sound, air-bubbles may be noted in the wound, and serious symptoms may or may not follow. Twice Da Costa (*Med. Review of Reviews*) wounded the subclavian vein and heard this sound, but no alarming symptom developed. If serious symptoms are produced, they arise suddenly and consist of extreme failure of circulation, a curious whirring or churning sound on cardiac systole audible even without a stethoscope, deadly pallor or cyanosis, gasping for air, convulsions, and possibly death.



Glandular Insufficiency in the Examination of Recruits.—A careful search for the stigmata of endocrine insufficiency should form part of the examination of recruits says Sajous in his exceedingly valuable article in the *New York Med. Jour.* (Sept. 1, 1917). Particularly should it include examination of those organs concerned with the defensive mechanism herein described. Restricting the list of those phenomena which the average subject would deem insignificant, even if known to him, or at least to constitute an illness, the following may be observed: In hypoparcreatism, more or less marked adynamia, mental and physical, often mistaken for neurasthenia, accompanied in some cases by occasional gastrointestinal discomfort occurring one or two hours after meals, and perhaps alimentary glycosuria; in hypoadrenia, also more or less marked adynamia, but with low arterial tension, weak cardiac impulse, slight pallor and sensitiveness to cold, particularly of the extremities. Overworked and underfed men often show these symptoms and promptly recover under normal military conditions and food. Bronze spots, particularly on the back of the hands, are of no significance in such cases unless baldness, deficient eyebrows, and lack of hair in the axillae and on the mons, and also dyspnea under normal exertion are noticeable. Sergeant's white line may be obtained but only where advanced hypoadrenia is present. Hypothyroidia may be present with the thyroid either atrophied or hypertrophied, because the latter condition may be due to compensative hyperplasia of a deficient gland. As this enlargement may occur as a symptom of Graves' disease, larval or active, such a subject is quite liable to break down under stress or mental exertion of any kind. We have seen that Blanc noted the predilection of this gland to abnormal functioning in the present war. He found the oculocardiac reflex exaggerated

in such cases. In true hypothyroidia the subject may be fat, pudgy, prone to sweat easily, but with the skin rather pale than florid; they are often flatfooted, and their sweating feet are often foul smelling. They are usually obtuse and frequently mere grown up backward children, who, we have seen, are unusually liable to tuberculous infection. Their teeth are apt to be bad, and they often refer to rheumatic pains and have suffered from enuresis when young. Physical examination reveals but little that is certain other than the objective phenomena mentioned. Their fat necks render examination of the thyroid difficult. Yet atrophy or defective development of the organ may sometimes be discerned by palpation, while the head is rotated and bent backward during deglutition. The heart, under auscultation after a period of rest, shows weakened systole, usually with low blood pressure. Varicose veins are not infrequent in such cases. Fat pads about the neck are seldom sufficiently prominent to be distinguishable from the surrounding adiposis. Rarely, the symptoms of this latent hypothyroidia are observed in lean subjects, particularly in those with rounded shoulders and prominent Adam's apple, due we have seen to deficient filling out of the infrathyroid area by a thin isthmus and small lobes. These structures are so atrophied in some instances that they can be outlined only with great difficulty. Hypoparathyroidia may be associated with the foregoing or not. The symptoms pointing to this condition are often of a nervous order, usually choreic in character. The subjects are prone to eruptions of various kinds, and occasionally to asthma; and often furnish a history of numerous children's diseases. Injuries entailing solutions of continuity heal slowly, and their teeth are usually poor and yield readily to caries. Especially is this the case when the thymus, which has usually undergone involution when the recruit is of age, has done so too early. Here osseous deformities, particularly the pigeon breast, and a history of rachitis may be traced on inquiry. In this connection Sajous recalls the possibility of a hypertrophied thymus, a dangerous condition in a soldier exposed to violent exertion, owing to the possibility of sudden thymic death. The typical circumscribed triangular area of dulness over the manubrium, bulging veins over the upper part of the chest,

and stuttering, as recently shown by William Browning are the salient symptoms of this condition.

All these stigmata of insufficiency may, as previously stated, be merged evenly in some, or irregularly, one or more standing out more or less prominently in others. Where the symptom complex fails to point to one enfeebled organ, the so-called "neurasthenic" complex, including such symptoms as loss of strength and low blood pressure, prevails. The two organs whose stigmata are most frequently discerned, however, are the adrenals, insufficiency of which, as Sézary also concludes, means "a permanent inability to protect the body against infection," and the thyro-parathyroid apparatus, concerned, as Léopold-Lévi and De Rothschild contend, "with the mechanism of every day infections."

Pluriglandular Insufficiency and the Necessity for the Intelligent Application of Organotherapy.

—In the article elsewhere referred to in this department as appearing in the *New York Medical Journal* (Sept. 1, 1917) Sajous asks, does organotherapy add anything to our resources in the protection of a subject showing the stigmata which indicate vulnerability to infection and particularly to tuberculosis. Clinical experience has shown that the use of organic products are valuable additions to our prophylactic methods, but on the condition that their random use, now so prevalent, be avoided. If, for instance, thyroid gland is administered in full doses the case may rapidly get worse, because catabolism is enhanced with further emaciation, a rapid heart beat, lassitude, and at times "rheumatic" pains as a result. Anabolism, *i. e.*, the constructive phase of anabolism, should have been encouraged. Apparently, then, small doses are indicated. Even then but temporary results are obtained, occasionally in fact, with aggravation, because they will have sensitized the cellular nucleins, and increased their oxidation at the expense of the already weakened adrenals. Briefly, the patient will also need some form of adrenal product, or, preferably, its far more efficient homologue, posterior pituitary, to take the place of the deficient adrenal secretion, and nucleins, as supplied by a diet rich in animal

food. The pancreas, so important not only in intestinal digestion, we have seen, but also as the active agent in the defensive process, sometimes recovers its activity without requiring the administration of pancreatic preparations. In most instances, however, where insufficiency of the pancreas is clearly discernible thru the phenomena described, pancreatin will prove a very efficient adjunct. Where the heart is abnormally dilated, an index often of hypoactivity of the adrenals, digitalin is helpful by stimulating these organs. Indeed, several investigators have shown that severing the splanchnic, which contains the nerves, to the adrenals, arrests the action of digitals. Where the hemoglobin ratio is low, iron is helpful with the adrenal products or their congeners, to build up rapidly the hemoglobin molecule.

These examples, the author well points out, serve to indicate that the intelligent treatment of these exposed subjects, whether in civil or military practice, require careful adjustment of the measures employed to each case, as elsewhere in the domain of rational therapeutics.

Treatment of Hypertrophy of the Thymus Gland.—According to a writer in the *N. Y. Med. Jour.*, thymectomy is unquestionably the treatment of choice and the technic by intracapsular enucleation is also unquestionable. Any attempt to remove the gland with its capsule results in severe loss of blood and exposes the patient to injuries of the pleura, pericardium and large vessels. As to the utility of total or partial excision, opinions differ, but in going over the records of reported cases it seems evident that partial subcapsular thymectomy offers the best chance of success with comparatively little risk. The ultimate results have been excellent and an immediate and lasting improvement has been noted. In considering the mode of action of surgical treatment, it must be remembered that in partial thymectomy when only a very small fragment of the gland has been removed, this has been quite enough to cause the symptoms to subside. It is probable also that the improvement resulting from removal of only a portion of the gland is not due entirely to this fact and that the free dissection of the superficial

aponeuroses, which results in disorgement of the thymus, must be likewise taken into account. Radiotherapy may be practiced to cause an acceleration of the thymic involution, but sufficient experience has not as yet been acquired to enable one to speak positively as to its utility.

Interrelationship of Female Sex Glands and the Pituitary Body.—King reports, in *American Journal of Obstetrics and Diseases of Women and Children* (Dec., 1917), that facts are gradually being evolved by the clinical study and experimentation and each newly acquired fact affords another nucleus for further theory. Of all the ductless glands none has greater interest than the pituitary. Upon approaching the study of the ductless glands from any angle it must be clearly kept in mind that none of these glands act entirely independently. The interrelationship is so close that disturbance of one gland will influence the secretion of one or more of the others. Therefore, the clinical manifestations presented are often very complex, indicating a perversion, not of one gland—but of several.

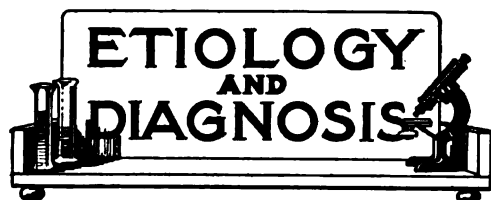
The pituitary influenced metabolism in growth of bone and disposal of the carbohydrates. Its influence upon the sex organs had been repeatedly demonstrated, and it was an important factor in the phenomena of puberty and in the sex life of women. The secretion might also influence mental characteristics, as seen in the hyper and hypo stages of acromegaly. The clinical picture of the less evident forms of pituitary dystrophy would vary somewhat with the age when the perversion occurred. Occurring before puberty, menstruation either failed to appear or was irregular and scanty, and there was evidence of disturbed carbohydrate metabolism. A diagnosis of infantile uterus was usually made. The perversion occurring after puberty was evidenced by menstrual disturbance and rapid increase in weight. Married women who suddenly gained greatly in weight, with menstrual disturbance or amenorrhea, represented an interesting type. They were obsessed by a belief in their pregnancy. There was high sugar tolerance.

Results from prescribing pituitary prep-

arations are sometimes disappointing but not discouraging. They indicate that it is probable that the treatment of these patients is a complex problem and the solution of the question will come only after we have learned more of the balanced relationship of the endocrine system.

Kidney Organotherapy.—Anders, in *Dominion Med. Monthly* (Dec., 1917), reports that this method of treatment has recently received considerable attention, but it has not had vogue long enough to permit of a proper appreciation of its value. Sajous claims that favorable results have been reported in about one-half of the cases of chronic nephritis in which kidney preparations have been tried. One may use a maceration, or more conveniently a tablet known as nephritin. The dose of the latter is ten to fifteen 5-grain tablets daily, preferably given between meals. Kidney preparations produce several effects, of which the chief are three: (a) the prevention of uremia; (b) a reduction in the percentage of albumin; and (c) increased diuresis. It is not improbable that nephritin and other kidney preparations owe their stimulating effect upon the urinary output and their antitoxic power to an adrenal principle in organic combination.

Salvarsan has yielded encouraging results in cases of syphilitic origin. Perhaps the only prerequisite to a fair degree of success in the use of salvarsan or neosalvarsan is the selection of cases in the earlier stages of this form of nephritis, since no drug "can possibly restore destroyed renal parenchyma or transform fibrous connective tissue into secreting kidney cells."



Cause of Appendicitis.—While some of the causes of appendicitis are still obscure, certain facts are definitely known which seem to predispose to this disease, DeForest says in the *N. Y. Med. Jour.* (Sept. 15, 1917). He believes

that if the proper hygiene of nutrition is observed it will go a long way toward warding off this disease. He especially warns against irregular meals and too rapid eating, and also against the use of too finely prepared foods. In summing up he says the disease may be due: 1, to infection from the presence of one or more of the intestinal microorganisms; 2, to circulatory disturbances, more or less readily produced by sharply curved or angular shapes of the organ, or a deficient blood supply; 3, to the presence of accidentally imprisoned fecal matter, which is prevented from returning to the cecum both because of the feeble expulsive power of the tube, due to an insufficiency or entire absence of circular muscular fibres, and because of constriction of the tube, which may or may not be due to previously existing inflammation. This fecal matter, because of bacterial infection which it conveys to the parts or because of the pressure effects due to inspissation or both, contribute to the etiology of the disease in its entirety, but particularly in the cases in which perforation takes place. All pain in the right side is not necessarily due to appendicitis. It is quite as often due to indigestion with resulting colic. A tablespoonful of castor oil with an equal amount of glycerin in a glass of iced lemonade can be taken at once by a person who believes he has appendicitis. It can do no harm, and will effectively clear up the diagnosis. Many an attack of appendicitis has been eliminated by this procedure. Once the diagnosis has been made, however, the sooner operation is performed the better.



Treatment of Colds.—Since colds are a serious condition they should be treated as such. A great many people think that they have an infallible remedy for breaking up a cold. This may be harmless in itself, but usually it is not, and consists of a combination of harmful drugs and alcohol, the latter usually preponderating, points out Rucker (*Pacific Med. Jour.*, Oct., 1917). The sufferer takes these preparations in large quantities, and if he is strong enough he may survive them and eventually get the best of his cold. Self-medication or medication by untrained persons is always dangerous. It is especially dangerous to those having colds and should always be scrupulously avoided. As a rule, much time, inconvenience, and suffering will be obviated by consulting an intelligent physician promptly. If this is not practicable, a brisk saline may be taken and the patient put to bed. This gives his body an opportunity to regain its vitality and at the same

time isolates him from other people. The sick room should be well ventilated and the windows so opened as to keep the air moving freely. It is also wise to moisten the air a little bit by putting a pan of water on the radiator or over the register or on the stove. The handkerchiefs and bedding used by the patient should be sterilized by boiling. Kissing and the use of drinking cups and towels, etc., in common with other members of the household, should be forbidden, it being borne in mind constantly that colds are infectious and readily spread from one person to another.

The Treatment of Wounds of the Knee-Joint.

—In the treatment of wounds of the knee-joint, Novis (*Lancet*, July 7, 1917) lays stress on the necessity for free drainage of the posterior pouches. If this is done at a reasonably early stage, the large majority of cases will recover with a useful limb and many with a fair range of movement. Complete ankylosis will by no means necessarily follow. Novis is convinced that too extended a trial of milder methods of treatment has led to the loss of many limbs and lives which might have been saved, had free drainage been established earlier. Moreover, free incisions into the posterior pouches will do all that can be hoped for from freely opening up the joint by cutting thru the ligamentum patella and other ligaments and will leave an infinitely more useful limb.

Cystitis in the Female.—Walther in the *Nurse* (Sept., 1917) states that every cystitis patient needs rest, and the best rest is secured by putting the patient to bed. Free water drinking should be encouraged except at those intervals when internal urinary antiseptics are being given. Then the water intake is to be limited so that the bladder mucosa may be bathed in as concentrated an antiseptic menstrum as possible. The food should be light and nourishing. Warm sitz-baths produce relaxation of the pelvic parts and are of benefit. The bowels are to be kept open. Give the patient as much fresh air as possible and let her sleep out doors when practicable.

Irrigations given in bed are most unsatisfactory to both patient and nurse. The "two-way" catheters so often employed by physicians as well as nurses in handling such cases defeat the very purpose for which irrigations are primarily given, that is, to distend a contracted viscus. Therefore, the ordinary type of catheter is the one to use. A word of caution should be given about overdistending bladders. It is possible to rupture some bladders by overfilling with a solution introduced at great hydrostatic pressure, therefore the irrigator should not be elevated more than six feet from the floor. Until the capacity of the bladder is known, it is better at the first irrigation to use only fifty to one hundred mls of solution at a time. After the capacity has been determined by gradually increasing the amount of fluid, the viscus can be filled until the patient states that she experiences a sensation of fullness in the bladder

region accompanied by an urgent desire to void urine. This indicates that the bladder capacity has been reached.

The time required for a cure in many of the more severe types of bladder inflammation must be measured in months, not days. If the diagnosis is correct and the treatment is given properly, success will finally crown the endeavor.

Treatment of Varicose Veins in the Legs.—Lazarus states in *New York Medical Journal* (Nov. 3, 1917) that varicose veins may be caused by chronic constipation, pressure of the fetal head, continued standing and straining upon the legs, congested liver, heart or kidney and many other conditions. After ascertaining the cause of the trouble and instituting appropriate treatment for that, the treatment of the varicose vein itself becomes of prime importance.

The medical treatment consists of absolute rest in bed in a recumbent position, with the legs slightly elevated, this being carried out for a period of three to six weeks, overcoming or correcting the existing constipation, putting the patient on light nutritious food and avoiding alcoholic beverages, and applying either a well fitting stocking or rubber bandage, either of which must be applied while the limbs are slightly elevated and the patient is in a recumbent position.

If inflammatory signs are present, then a wet dressing of a two per cent. alum acetate solution or the application of a fifty per cent. ichthyol ointment is of great benefit. The patient may go about, but must wear a stocking or bandage which should be applied and removed while the leg is in a slightly elevated position. Treatment by medicine is of little avail, but medicine to correct errors of diet, constipation, and general anemia and run down condition should be given. A capsule consisting of extract vomica, grain $\frac{1}{2}$; acid arsenic grain 1-60; and phenolphthalein grain $\frac{1}{2}$ will be found efficacious.

Remedies Useful in Pneumonia.—The therapeutic iconoclasts several years ago worked overtime exploiting the opinion that the medical treatment of pneumonia is nil. *Med. Standard* (Oct., 1917) believes, however, that most general practitioners attach considerable significance to remedial agencies in this disease. Carbonate of ammonia once so freely and hopefully employed with a view to liquefying the secretions, maintaining fluidity of the blood, etc., had its death-knell sounded by those who did not believe much in drugs. Still we believe that practical and successful physicians use ammonia, ipecac, emetine, apomorphin and many other drugs to advantage in loosening cough, aiding expectoration and, in some measure, facilitating resolution.

The most of us are conservative enough to believe that no single drug exerts a specific role in pneumonia. Quinine in elephantine doses has been encouraged by many doctors as a cure

in this disease. The majority of us incline to the belief that the patient's chances of recovery are jeopardized by extreme and prolonged cinchonization. A good many physicians during the past decade have extolled a theory that chloral hydrate to the extent of sustaining a marked somnolency for two or three days will abort pneumonia. It is said that in a case of croupous pneumonia, where the patient does not sleep the first forty-eight hours, the chances of recovery are meagre, and the chloral theory is based on this supposed fact. Again, most of us would prefer to lull the patient into passivity with morphine or codeine rather than resort to a remedy known to be depressant to the heart and vital centers.

Aconite and veratrum are generally recognized as top-line circulatory sedatives during the early febrile stage, but it seems to be a consensus of opinion that digitalis is about our most useful drug in pneumonia, especially in cases of organic heart disease. Many physicians administer a good tincture digitalis in ten-drop doses three times a day and oftener as the exigencies of the case demand. It is necessary to see that the digitalis is obtained from a source that will insure its potency.

Strychnine is a drug that is often abused, although it is one that has its particular indications. Evidences of toxemia accompanied by a poor circulation and slow pulse call for this remedy in 1/30 grain doses hypodermically every three or four hours. On the other hand strychnine only whips up the heart in some individuals and makes their lives more uncomfortable, not apparently exerting any salutary effect upon the cardiovascular system.

Camphor as a heart stimulant is one of our most dependable agencies. The camphorated oil may be administered hypodermically in one to three grains as often as stimulation seems required. Caffeine as a stimulant ranks along with camphor and it should not be forgotten that one of the few real indications of whiskey of good quality is at the crisis of pneumonia. The writer has thought that he has seen life saved by the timely and free use of *spiritus frumenti*.

Nitroglycerine is not a true heart stimulant. It may be used to advantage for a short time in cases of cyanosis where the heart is laboring and struggling against high pressure. Oxygen is always of advantage in cases of embarrassed heart and respiration. Abundance of fresh air may usually obviate the need of a tank of oxygen.

Calomel and salines have not been mentioned in this list of drugs, but it is taken for granted that they have been employed in the incipency of the disease with a view to stimulating secretion and bringing about thoro elimination.

Treatment of Otitis Media.—Earaches usually come on at night. Good, in a recent issue in the *Ill. Med. Jour.*, says at the very first indication of pain in the ear the patient should get up and drink a little water or eat something in order to make him swallow, as in the act of

swallowing the tensor tympani and palati muscle contracts and opens the eustachian tube, thereby promoting drainage. In addition to this the nostrils should be opened with adrenalin and cocaine. One-half hour thereafter the patient should take a mouthful of water, and while in the act of swallowing, the nose should be held tightly shut as in this way secretions are sucked out of the ear. The patient should then blow the nose with force and suddenly close the nose in the act of blowing. This will blow air up into the ear. If this is carried out immediately upon the first sign of acute otitis media, you will be amazed to find how many cases you have bridged over without developing otitis media.

The physician should make an early diagnosis before the drum membrane ruptures and have the drum cavity opened before serious pathological changes have taken place in the tympanum where the ossicles, facial nerve, oval and round windows are located. By so doing you prevent mastoiditis, chronic suppurating ears and deafness. It is preferable that the operation of opening a drum membrane should be performed by a physician who has had experience in ear diseases.

It is not considered wise to irrigate an ear before one is certain that the discharge is purulent, for the reason that if we irrigate an ear that is not affected it will become infected. It is a well-known fact that if a drum membrane becomes perforated from a blow or a gun-shot explosion it will usually heal without infection if left alone, whereas if it is irrigated it always becomes infected.

The author believes that frequent irrigations in suppurating ears give the best drainage and keep the ear the cleanest. A twenty-five per cent. solution of argyrol, dropped into the ear after each irrigation, is nonirritating and at the same time a good antiseptic. A chronic running ear is like a charge of dynamite in the brain. You cannot tell when it will explode.

Gastric Ulcer.—Fischbein in *Boston Medical and Surgical Journal* (March 29, 1917) advises using a modification of the original von Leube-Ziemssen method, the chief points of which are:—(1) Rest in bed, (2) A bland easily digested diet, (3) Hot applications to the abdomen and (4) Alkalies to neutralize or to reduce the gastric acidity.

Rest in bed for at least 10 days is absolutely essential. If blood is found in the stools after 10 days, then the patient should remain in bed for from three to four weeks.

Feeding per rectum is illusory in the light of the newer physiology which teaches that the stomach is never at rest; however, this method of feeding might be tried after a recent gastric hemorrhage.

The first four days a cup of boiled milk (warm) is given every three hours. On the 5th day, gelatin with sweet cream flavored with strawberry juice is given; 6th day chicken soup and one raw egg beaten up with butter, the eggs being increased to four on the ninth day.

At the end of the second week, Robinson's barley, mashed tapioca, zwieback, masticated dry and calves' brains in chicken soup are allowed. At the end of the third week, mashed potatoes, mashed rice and boiled fish without the skin are added. At the end of the fourth week, tender chicken finely cut and lamb chops and in the middle of the sixth week broiled steak, roast beef, mashed spinnach, mashed carrots or turnips and bread and butter are added. The stools are examined and when no occult blood is found, the patient is discharged with written instructions as to diet to be kept for at least three years, and perhaps during the rest of his life.

This diet has not only been uniformly successful in all cases treated, but has served also in some instances as a diagnostic point between ulcer and cancer.

Hot applications to the abdomen exert a beneficial effect over the subjective symptoms and by keeping the patient on his back, they may aid indirectly in assisting the healing of the ulcer.

For medical treatment—one-half teaspoonful of sodium citrate and magnesia usta is given, one-half to one hour after feeding and when constipation is present a little powdered rhubarb root is added. Bismuth subcarbonate, a heaping teaspoonful in a glass of water is given in the morning on an empty stomach.

Magnesium Sulphate.—Nourse in *Clinical Medicine* (July, 1917) states that in recent swelling from sprains or other injury, application of hot solution of magnesium sulphate, under oil silk or even protected only with ordinary towels, is of the greatest value. Changes should be made often enough to keep the solution hot and the cloths saturated. Where possible, as in the foot and ankle or hand and wrist, directions may be given to soak the parts for from an hour to very much longer. Additions of hot water may be made to the solution as it cools or the patient's tolerance of the heat increases. There is no harm to abraded surfaces if the solution can be stood in contact with them. Solution may be employed up to saturation if desired, but one much weaker usually suffices. Often with no other treatment than this, especially if promptly instituted, it prevents serious trouble with a badly sprained ankle. It is the writer's custom to eliminate, by examination, luxation or fracture, then order the hot epsom-salt solution. With older injuries, continuous soaking in this manner often will so reduce swelling that diagnosis is easier.

Good results are obtained even in erysipelas from these applications. The saturated solution is used, preferably with the addition of glycerine. It should be continuously maintained. Here, we have local infiltration, and with this removed, the leucocytes seem to be able to handle the infection; altho, of course, other indicated internal treatment is not neglected.

In the swollen ankles of nephritic patients, great benefit at times is had from a nightly

soaking. Wherever edema is the result of watery fluid, the epsom salt deserves a trial.

The writer considers the use of this salt in womb conditions requiring relief of engorgement absolutely indispensable. In no other part are we more likely to find need of local depletion. Magnesium sulphate will surely do the depleting. An alkaline antiseptic douche well precedes the introduction of suppositories containing dehydrated magnesium sulphate at night and should also follow the use of one the next morning.

Epsom salt, with or without glycerine, is of importance given in enemas. However, it is from the retained high enema that the benefit is derived. If one is sure that an immediate bowel evacuation will follow, the addition of the salt might as well be omitted. Nevertheless, even the fair possibility of retention many times justifies the addition when the soothing and depleting effect is desired. At times, a washing out of the bowels may be followed in a little while by the introduction of a small amount of the saline solution, to render the cleaning-out process more thoro.

Trench Throat.—In the *Medical Press and Circular* (May, 1917) McKenzie declares that when first seen trench throat is very apt to deceive the unwary. With its clean cut ulceration and dirty-white pultaceous coating it resembles tertiary syphilis of the throat very closely. This mistake is often confirmed by the curious fact that in a bad case of trench throat, the Wassermann reaction may be positive. It is amenable (sooner or later) to potass. iodid, however, it is not a manifestation of syphilis, in spite of these resemblances.

Being infectious, the patient ought to be isolated, but strict segregation, save of course in camp or institution life, is unnecessary. There is general agreement that potass. iodid should be given internally. Clean up the ulcers; they should be touched with a crystal of silver nitrate or with pure phenol and the disease will disappear without any further trouble. The best cleansing agent is sol. hydrogen peroxid (10 vols. per cent.) sprayed frequently on the ulcers, each spraying being followed by a good rinsing of mouth and throat with the old fashioned potass. chlorat. and tc. myrrh mouth wash. Another local agent highly spoken of is tc. iodi. Yet another is 2 per cent. solution of argent. nitrat. in water.

Skin Grafting.—Archer says (*Lancet*, London, July 28, 1917) he has employed skin-grafting under local anesthesia as an almost routine method of accelerating the healing of granulating wounds. The time saved, even with small wounds, in itself justifies the operation, and for wounds in proximity to joints and tendon sheaths skin-grafting ought to be the accepted and regular method of treatment as being the only one by which cicatricial contraction can be reduced to its minimum. The author obtains

anesthesia by infiltration with 1 per cent. novocaine solution. For small grafts a portion of skin is raised by injecting the solution beneath it, and the surface of this raised portion is removed with a sharp scalpel or Thiersch's knife. For larger grafts he employs infiltration only by injecting the solution into the subcutaneous tissue in two lines diverging downwards from a point in the middle of the thigh about 4 inches below Poupart's ligament. In this way a large area of skin can easily be rendered anesthetic. The grafting is done in stages, the later stages being applied as soon as the previous ones are firmly established. For retaining the grafts in position Archer uses a home-made dressing of one layer of dressing gauze, impregnated with paraffin wax. This is cut a good deal larger than the wound and attached around the edges with collodion paint. Thru the meshes of the gauze a very free inspection of the grafts is possible. Daily dressing is of the greatest importance, as any grafts which may have become partially loosened or floated off can be readily seen and manipulated into contact again by rolling with a glass rod or by pressure with the gloved finger. These grafts would inevitably be lost if the dressings were not removed till the third or fourth day. The operation of skin-grafting is exceedingly simple and can be done easily at the patient's bedside.

Trench Shin an Infectious Fibrositis.—Chambers in *Dominion Medical Monthly* (July, 1917) states the outstanding symptoms are pain and tenderness on pressure over the tibiae and tibiales antici, and in addition many other symptoms may be present, but most of them are not constant. Fever is nearly always present in the early stage of the condition, but disappears within a few days. Headache is the rule in the beginning of the disease, described by some patients as being "jumping" or "stabbing" in character. The temples and forehead are the most common sites of pain and the patients frequently state the pain is intensified by rapid movement of the eyes or pressure on the eyeballs. Coughing also aggravates it. Pain in the back is also a fairly constant symptom. The muscles of the arms and thighs are common locations for the pain, and in a considerable number of cases the bony prominences and ligaments about the joints, particularly the knees and ankles, are painful and tender.

The view that the disease is primarily due to an infection is gaining more and more adherents. Its course is very slow; recovery eventually takes place after a period of from two or three weeks to two or three months.

The treatment is chiefly preventive. One of the first essentials is the avoidance of anything, such as tight boots or puttees, which is likely to obstruct the circulation. It is recommended that the feet, legs, and if necessary, the whole of the body should be thoroly rubbed with animal fat or animal oil. Daily massage of the parts between periods of trench duty has also been advised.

Rest in bed is essential. Aspirin and phenacetin may be tried for the relief of pain. In cases in which the pain is very severe, an incision thru the periosteum has sometimes been made and it is said to be of much value.

The Treatment of Infected Wounds.—Dyas in *Mississippi Valley Medical Journal* (Aug., 1917) claims it should be our purpose in the treatment of infected wounds to as speedily as possible dispense with methods which tend to macerate the tissues by keeping them continuously saturated with some form of antiseptic solution. The principle of dehydration of tissues for their preservation is older than the science of medicine itself.

The results obtained in the treatment of wounds infected by gas and tetanus bacilli in the present war have emphasized the necessity of not only making free incisions, but of keeping the incisions widely open.

The application of voluminous dressing to infected wound surface confines the infective discharges and subjects the tissues to a path of pus.

Exposure of infected wound surfaces to the air causes a rapid drying up of the wound secretion and a dessication of the tissues by the evaporating action of the atmospheric air, which can be increased by playing a current of air from an electric fan on the exposed area.

Infection from the air is negligible.

The open method of treatment tends to convert the moist into dry type of gangrene and produces unfavorable conditions for the growth of anerobic organisms which are clinically more virulent than aerobic.

The period of infection is shortened by the use of certain solutions, as a bath or irrigation, unfavorable to the growth of bacteria, which must be discontinued as soon as the signs of infection subside.

Diabetic Coma or Acidosis.—When diabetic coma or acidosis is threatening, the following combination according to the *Practitioner* (London) will often completely clear off the dangerous threatening signs. Cases on the very border of actual coma may sometimes be brought into a state of comparative safety. It is a modification of a prescription suggested by Dr. Langdon Brown in his "Physiological Principles in Treatment."

The heralding signs indicating the use of this mixture are, when they occur in the subject of diabetes or glycosuria:—

1. Obstinate and sudden constipation.
2. Feelings of dizziness, cloudiness of the brain, inability to think quickly and clearly, and difficulty in concentrating the mind.
3. Loss of appetite, with furred tongue.
4. The sweet smell of acetone on the breath.
5. The appearance of acetone bodies in the urine.

6. Feelings of general lassitude and disinclination for exertion.

7. Acceleration of the respiratory rate, indicative of the advent of air hunger.

8. Nausea or vomiting.

For 48 hours, the diet should consist of copious draughts of milk (skimmed or citrated) and Contrexville water. A sharp saline purge should first be given.

After the attack is over, this preparation, or half doses of it, should be taken during the first and third weeks of every month—two or three times daily. The magnesium and calcium are necessary in order to replace the drain on the alkaline bases. When an attack is threatening, the bowel should be washed out with copious saline enemata.

Heart Failure and the Administration of Digitalis.—Flint in an interesting article in the *London Practitioner* (Nov. 1917) does not think the medical profession, as a whole, yet realizes the one important, definite and scientific principle which determines the choice of case to which digitalis should be administered.

In the past, digitalis has not been given to cases of heart failure on any scientific principle, but rather as a matter of routine, and because tradition decrees that it is beneficial.

It is very important, from the patient's point of view, that the medical attendant should be in a position to determine the nature of the heart's rhythm in all cases of cardiac failure, because digitalis must be pushed until its physiological effects are obtained, in those cases in which its use is indicated, and in some cases the drug must be continued for years, if the individual is to lead an active and useful life.

In cases of heart failure with an abnormal rhythm, not only is it necessary to cut down the exertion made by the individual, or insist, perhaps, on his complete rest, this being the main line of treatment in cases with a normal rhythm, but also to take active steps to reduce the rate of the ventricular contractions. This can only be accomplished by giving digitalis, and so producing a greater degree of heart block.

Flint very properly makes it clear that digitalis does not affect the rate of the auricles; and provided the number of auricular stimuli which are allowed to pass to the ventricles is kept under control by digitalis, the rapid auricular rate in fibrillation or flutter does not embarrass the ventricular muscle, and thereby give rise to heart failure.

Method of Administering Digitalis.—Mackenzie states that digitalis must be given in large doses and pushed until its physiological results are obtained. He recommends giving one drachm (m.xx t.d.s.) of the tincture in the day until the pulse rate is slowed, or some of the other signs of sufficiency of the drug are observed. This effect usually occurs from the fifth to the seventh day.

Then the drug should be stopped entirely until the signs of digitalis sufficiency have passed off, which usually takes a couple of days or so, and as soon as the pulse rate begins to increase it should be administered in half the original dose. This second dosage is then adjusted until that dose is found, which keeps the pulse rate fairly slow and makes the patient feel most comfortable.

The patient should, as a rule, be kept in bed during the first week, whilst the large initial doses are being administered.

Signs of Sufficiency of Digitalis.—The following signs and symptoms indicate that sufficient digitalis has been given, and that the drug should be stopped for a short time—slowing of the pulse rate to between 70 and 90 per minute, bad dreams, headache, vomiting, diarrhea, diminished excretion of urine, and the development of occasional extra systoles. If the extra systoles become frequent, it is a call for the drug to be stopped at once. The appearance of coupling of the heart beat, which is so characteristic of the administration of full doses of digitalis in cases of auricular fibrillation, is an urgent indication that the drug must be stopped at once. If the drug is continued, sudden death may occur, probably due to the ventricles entering into a condition of fibrillation. In some cases of auricular flutter, digitalis gives rise to auricular fibrillation; if the drug is then stopped, the abnormal rhythm may revert to the normal.

Irritable Bladder in Women.—Stark in *New York State Journal* (Dec. 1917) thinks that by far the most common cause of bladder irritability in women is chronic urethritis, or urethrocystitis; we have acute urethritis, but this is usually gonorrheal in origin, chronic urethritis may follow an attack of acute urethritis. The most common cause of infection of the urethra is the forcing of infectious material and bacteria up into the urethra by means of the napkin worn by women; tight and small napkins separate the labia (which acts as a protection for the external meatus). The napkins, which are none too clean to begin with, soon become contaminated with bacteria from the vagina, skin or hair, and are continually held in contact with the external meatus; this probably is the real reason why urethritis is such a common complication of pelvic diseases; the discharge associated with pelvic disease is sooner or later carried to the urethra by means of the napkin.

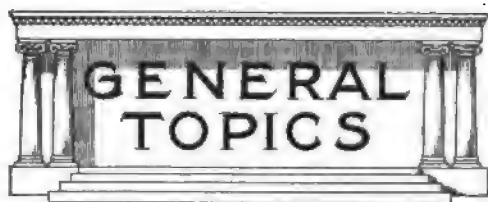
Urethrocystitis is an extension of the urethral infection to the neck of the bladder and trigone; this may be a simple conjection or a low grade colon bacillus, or less frequently a staphylococcus infection; chronic urethritis is usually located at the upper and lower ends of the urethra and does not as a rule involve the middle section. On examination with Kelly endoscope the glands in the posterior urethra are more marked, the mucosa is dark red in color, is swollen and bleeds easily, and granu-

lations are very frequent. When the anterior urethra is involved the mucosa is reddened, and often a purulent secretion is forced into the speculum from the peri-urethral glands; other conditions near the external meatus that give bladder irritability are eversion of the mucous membranes, hemorrhoidal conditions, and caruncle; with these conditions dysuria is more pronounced than frequency.

The urine should be made as bland as possible, application of 20 per cent. silver nitrate to trigone, while 3 to 10 per cent. silver nitrate is applied to the urethra about once a week. Every day or every other day irrigate these bladders with a solution of 1-5000 to 1-1000 silver nitrate in distilled water; the patient urinating the final filling of the bladder. Do not give urotropin. In those old cases where there is more or less fibrosis of the urethra, and the urethra becomes irritable every time the urine becomes acid, it will be found very advantageous to dilate in addition to the above treatment; dilate with a straight Kohlman dilator; this dilation is carried very slowly from 30 F. to 45 F.

New Method of Treating Flagellate Infection.—McNeill in *Southern Medical Journal* (July, 1917) writes that the following prescription is found to give very good results in the treatment of this infection of the intestines.

R Methylene blue (med. pure)...gr. v.
Quinine sulphategr. xx.
Hydrochloric acid (conc.)...m. xxx.
Aqueae destillatae q. s. ad.....℥i.



The Control of Narcotic Drug Abuse.—"If we are ever going to control this narcotic drug matter," says Albert J. Weber, foreman of the Federal Grand Jury of the Southern District of New York, "and prevent the further spread of it, we must proceed on two broad lines—and we must proceed on these two lines simultaneously. We must absolutely control illegal and criminal distribution on the one hand, whether that illegitimate distribution is thru the underworld street vendor, or thru the dishonest members of the medical and pharmaceutical professions. On the other hand, we must see to it that competent and humane treatment is secured for the sick addict at the hands of the honest physicians and honest institutions. If either one of these lines of remedy is not accomplished, the other will fail."

Another Consolidation.—*The Pacific Medical Journal*, the oldest journal on the Pacific coast, which has just completed its 60th volume, has been acquired by Dr. William J. Robinson and will be consolidated with *The American Journal of Urology and Sexology*. The combined journal will continue under the editorship of Dr. Robinson and will be published from 12 Mt. Morris Park West, New York City.

Care of the Eyes in the Aged.—Hewlls in *Medical Review of Reviews* (Dec., 1917) arrives at the following conclusions regarding the care of the eyes in the aged.

1. Correction of refractive errors in the aged gives great comfort to them and improves their mental condition.
2. Strong lenses should be tried for 15 or 20 minutes before prescribed in order to get the full effect of the lenses.
3. By properly fitting glasses many a pleasant moment is spent in reading and is contrasted to a previous life of lonesomeness and solitude.
4. Reading a paper or good book takes their mind from themselves.
5. Certain arteriosclerotic changes are normal in the senile eyes.
6. Loss of reflexes, irregular pupils, contracted or dilated pupils not always significant.
7. Arcus senilis not evidence of old age or fatty degeneration.

Minute Foreign Bodies in Wounds.—Stewart declares in *The Trained Nurse* (Dec., 1917) that one of the most important matters that demands the immediate attention of the profession is the fact that minute foreign bodies in wounds are not only common sources of early fungoid granulations, but they are also frequent causes of very late sepsis. This importance is in no wise diminished by lack of mention or by absence of emphasis, for both of these are sins of omission that have furnished regret to numerous operators and that have halted the convalescence of many a patient. Metal splinters, bits of needles, pieces of wire and similar objects are quite bad enough, even when the damage that arises from their presence has been lessened thru the warning derived from the study and use of fluoroscope or of skiagram; but particles of wood may be overlooked by both eye and camera, tho they may give rise to ultimate results that are none the less exasperating because their present cumulative badness is made possible by a false security that originated in an invisibility of some retained, but not inert, nor absorbable, fragment.

The optoscope or finger-lens may be transported in kit or pocket as easily as may a monocle. At the same time its use at the very first cleansing or irrigation of a wound may prove to be an invaluable aid to efficiency;

so much so that the results of a surgeon employing it—even tho his apparatus otherwise were but a sterile fountain syringe filled with a well-bolled two per cent. solution of hard brown laundry soap—are, should be and have often been found better than those of that man who may have a most perfect service and apparatus at his command, and who yet lets the power for good of himself and his paraphernalia be finally brought to naught by the lack of a little lens with its large aid to his vision, and by his consequent incomplete removal of minute bodies from wounds.

Treating Chronic Diseases as an Office Specialty.—One of the most promising, as it is also one of the most obvious, classes of work for the physician to cultivate in his office practice is that of chronic diseases. Yet, strange to say, it is the one, of all others, which is most neglected by the average man. Atkinson in his article on "How to Develop the Office" in *Med. Brief* (Nov., 1917) declares that the majority of doctors find the treatment of chronic disease a stumbling block in the way of reputation and financial prosperity, whereas it ought to be a veritable stepping-stone to both. The reason, for the most part, is that they follow routine, or some slipshod off-hand course, instead of going about the work systematically, selecting and applying correct principles, making a definite plan of campaign and adhering to it.

You, doctor, are always going to "look carefully and thoroly" into some of those old chronic cases that have been coming to you for months, perhaps years, but somehow or other you never do; some day—when you "get time"—but you never seem to find the spare time. Always the urgent, pressing case seems to claim your immediate attention and pushes aside that less acute problem until some more convenient season. And so these unfortunate patients keep coming to your office, day after day, week after week; and you temporize and temporize, giving them palliatives and encouragement, always with the full intention of studying out their cases when you get a little more time. They never are, but always are to be, cured.

Probably it never has occurred to you that you have a splendid opportunity and ample material for a "specialty" right in your own home town, in these very cases which for so long you have been meaning to investigate. Yes, this is the very opening you have been looking for. Here, at your very door—your very own, in the intimate sense that a doctor's patients are his own people—are a hundred and one puzzling clinical problems waiting to be solved in a way that nobody but you can solve them, and offering all the field for your efforts in research and experimentation that you are likely to demand for the rest of your life, to say nothing of the satisfaction to yourself and the gratification to the patients, as well as enhancement to your reputation that will come from such work.

In these days of modern facilities, you can have all the assistance and suggestion, and the advantages of other and better men's experi-

ence that you desire. There are books on any subject you may be concerned with—excellent books, clear, concise, up to the minute, which an overnight mail will bring to your door. Laboratories and other clearing-houses of scientific investigation stand ready to lend you aid, all within reach of the same convenient postal service. There is hardly an agency of diagnosis or therapy that does not lie as ready to your hand as tho you stood in the center of a system organized for your special behoof—as, indeed, you do.

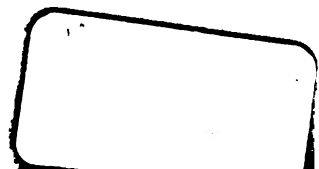
It is in the treatment of chronic disease that the physiologic, drugless modes of therapy have their largest and most fruitful field of usefulness. The physician who undertakes to make a specialty of this class of cases, therefore, will do well to equip his office with a fairly complete electro-, mechano-, and hydrotherapeutic outfit, at least sufficiently adequate to take care of the range of cases which he is likely to be called upon to handle. And this equipment, and its intelligent use, will very naturally lead out into a still wider and more profitable line of special work in these forms of therapy.

If you purpose to devote yourself to this kind of practice, you ought, in the first place, to furnish your office with a good X-ray apparatus,—one with which you cannot only make bone-plates, but explore the chest and abdomen and give X-ray treatment—a high-frequency coil, and a galvanic and faradic plate. It is possible, now, to get a machine which combines this grade of X-ray and high-frequency work, enabling you to do practically everything that comes under these two headings. With such a machine and a good wall-plate, you can cover all the electro-therapeutical and diagnostic ground that you are likely to encounter.

Then, if your circumstances will permit, it would be well to equip a room adjoining your office for at least the commoner forms of hydrotherapy. Tub-baths, hip-baths, needle-baths, shower-baths, packs, etc., can, by the ingenuity of modern invention, all be compressed into a very small space, and compassed by relatively few separate pieces. A vibratory machine and an apparatus for Bier hyperemia would make the equipment very reasonably complete.

Apparatus of this kind is somewhat expensive, to be sure, altho not nearly so expensive as it used to be. The expense, however, is only one of the first cost. If one goes into the thing thoroly and wholeheartedly, it pays for itself over and over again, and becomes a source of great profit and success in building up an office business. Merely to dabble in these lines of work with cheap and inadequate equipment, is neither satisfactory nor profitable. One must go into it for all it is worth, and, above all, have first-class apparatus, so as to do high-grade work. Under these conditions you will find it a success-making enterprise, for, as intimated above, it will not only enable you to make a paying specialty of diagnosing and treating chronic disease in your own practice, but will establish for you a reputation in this line which will bring you referred work from your brother physicians.

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